

Delaware Medical Journal



Official Publication of the Medical Society of Delaware



MAY, 1961...

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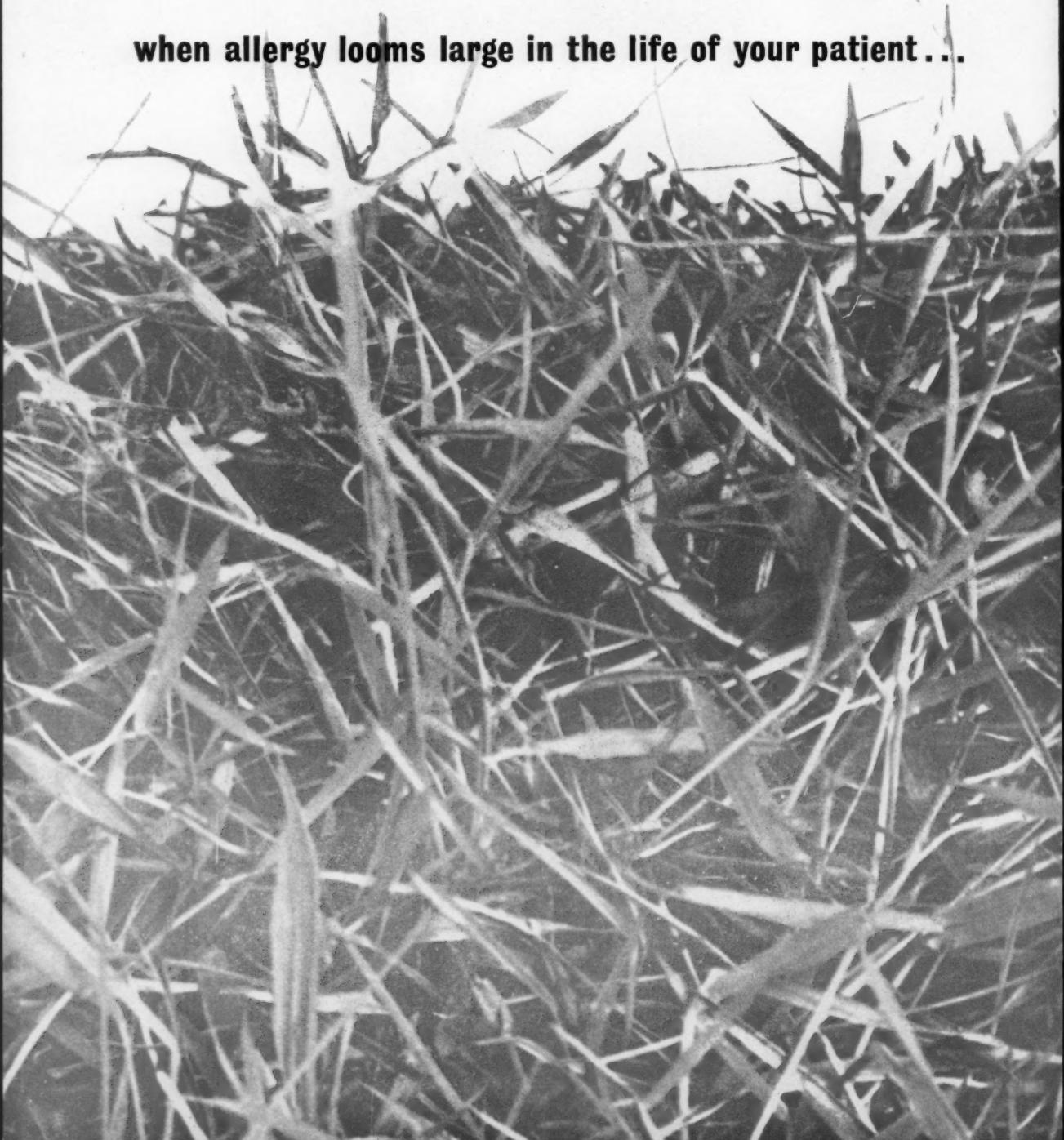
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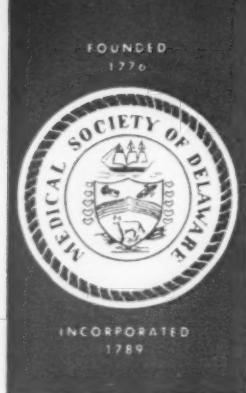
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Delaware Medical Journal

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Assistant Editor

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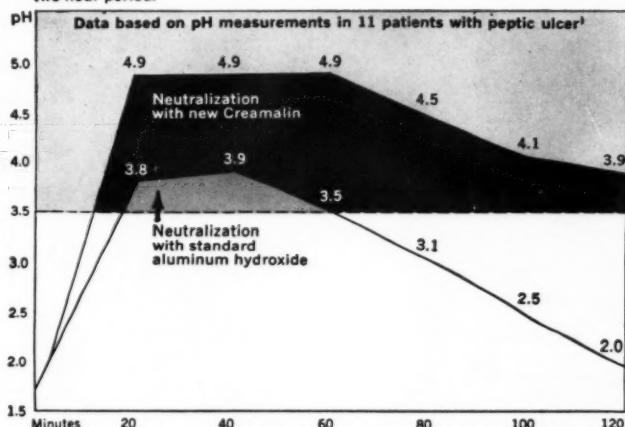
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1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:384, July, 1959.

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1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases “Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease.”²

2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis “It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . .”³

3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.⁴ Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.⁵

4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition.

National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases “Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult.”⁶

6. Overholser, W., and Fong, T. C. C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition. J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.⁷

7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec. 10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.⁸ “Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes.”⁹

8. Duncan, G. G.: Diseases of Metabolism. 4th edition. W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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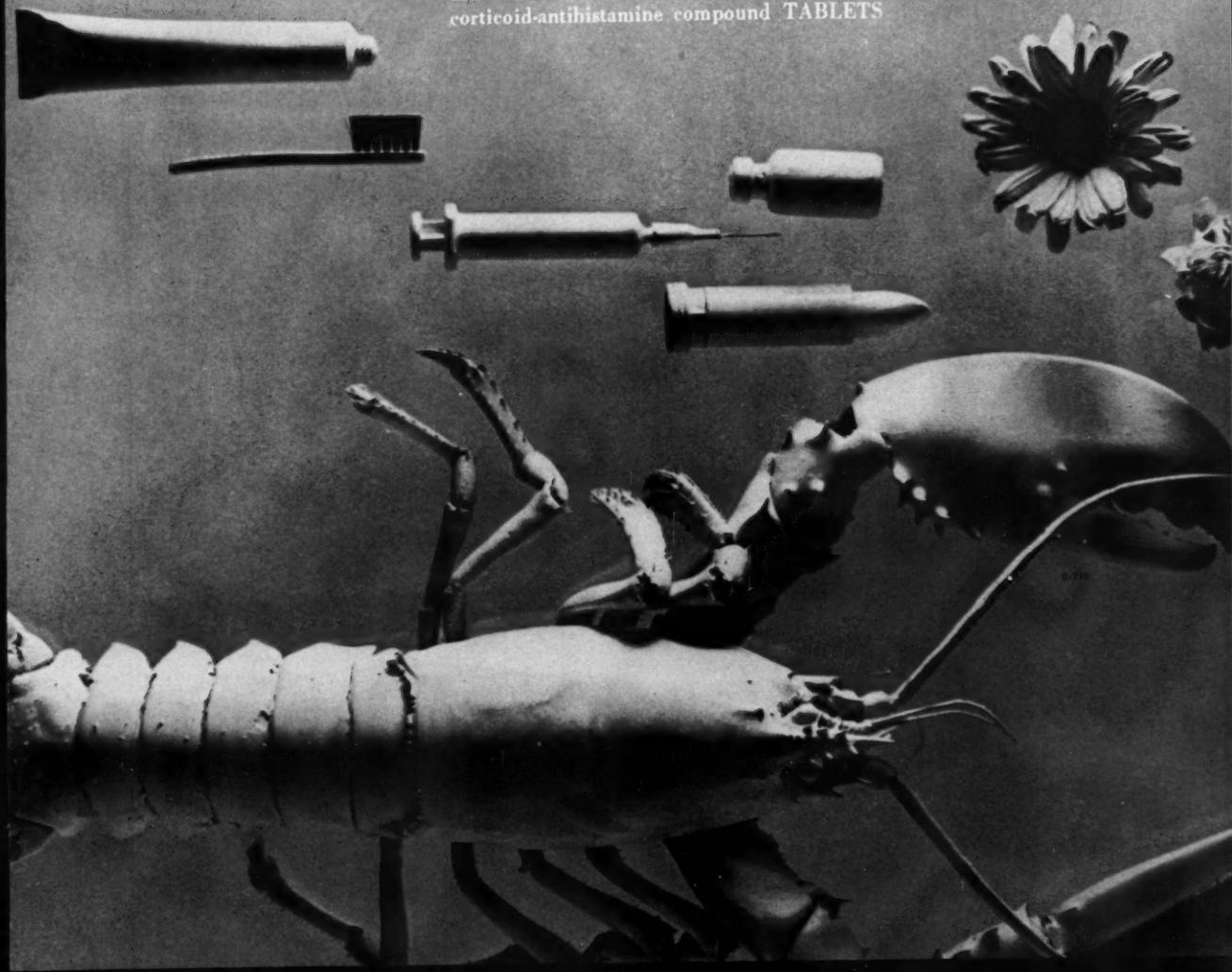
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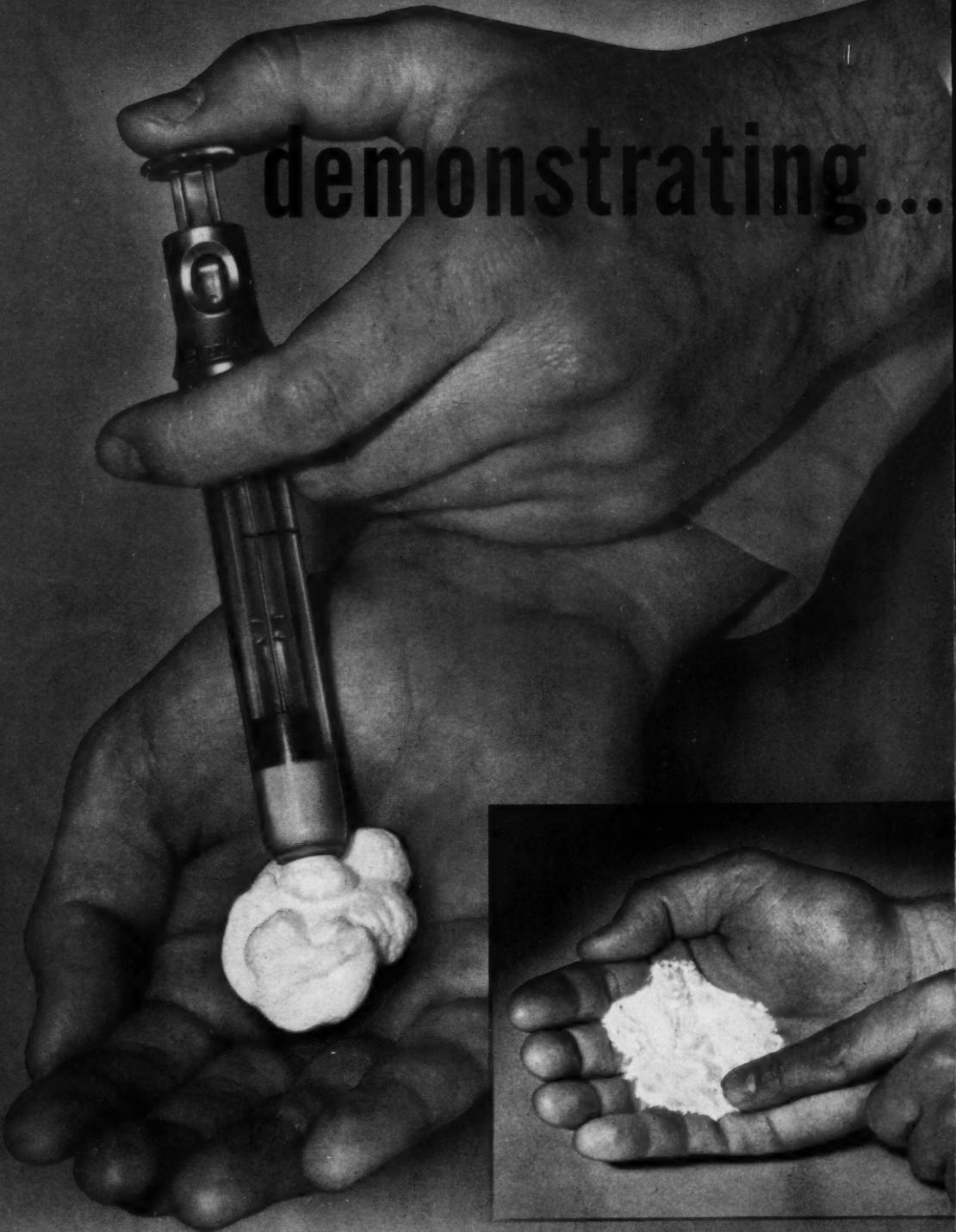
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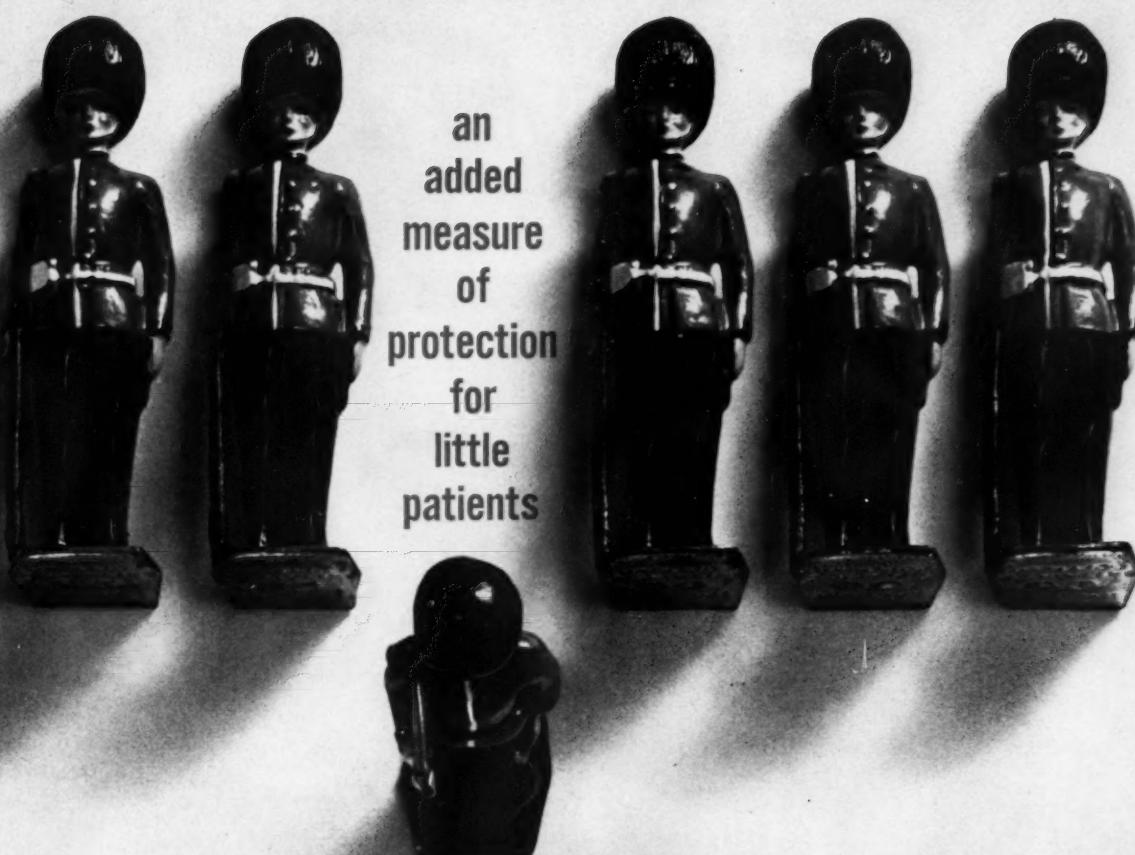
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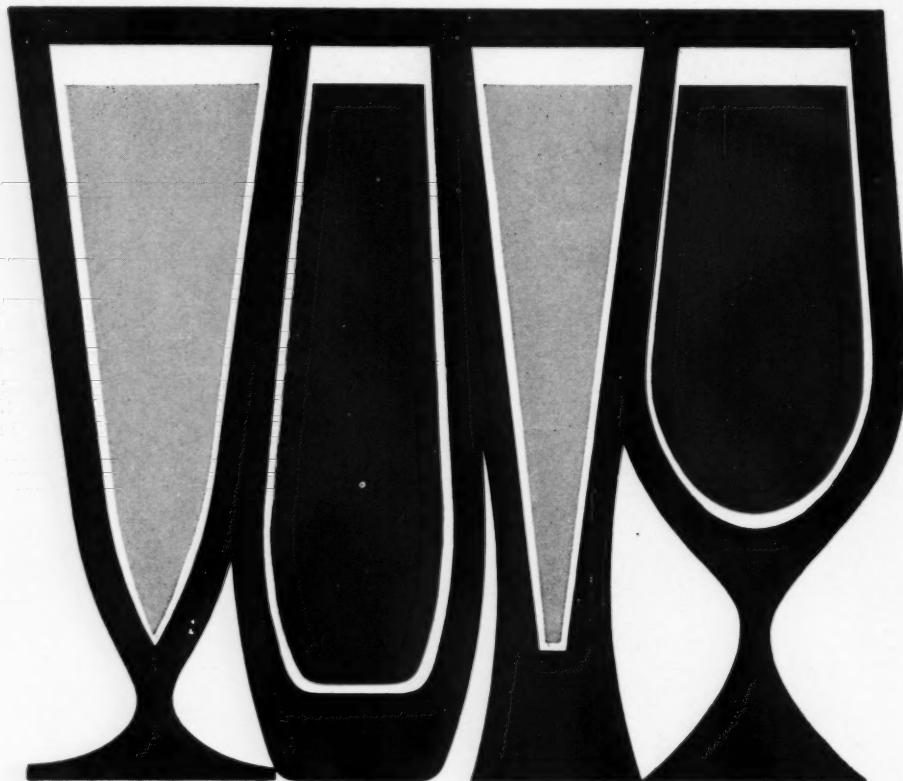
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Riboflavin, mg.	0.6 50
Niacinamide, mg.	5.0 50
Calcium, Gm.	0.5 67
Phosphorus, Gm.	0.4 53
Iron, mg.	4 40
Iodine, mcg.	60 60
Vitamin E (Int. Units).....	2.5
Pyridoxine, mg.	0.4
Vitamin B ₁₂ , mcg.	0.5
Calcium pantothenate, mg.	2.0
Sodium, Gm.	0.2
Potassium, Gm.	0.9
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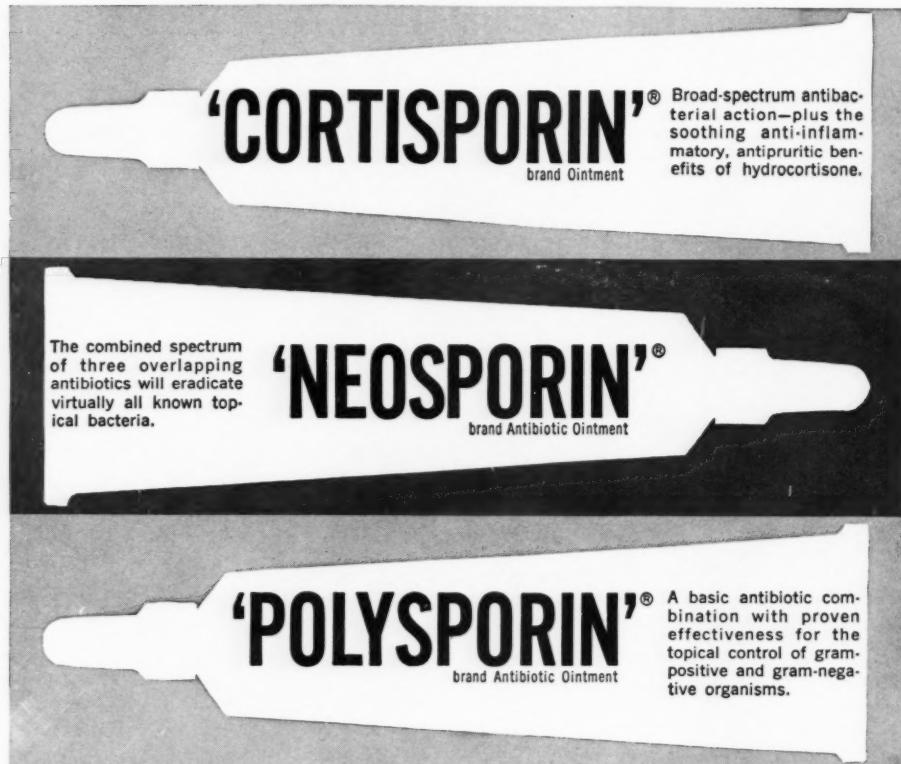
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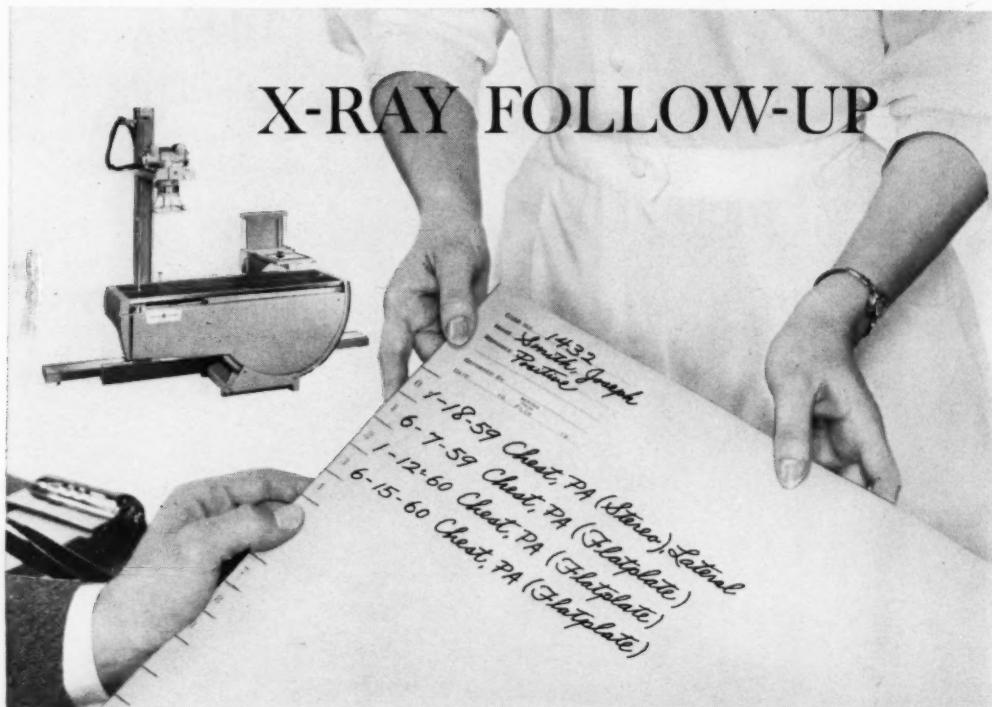
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Western Med. 1:45, 1960.

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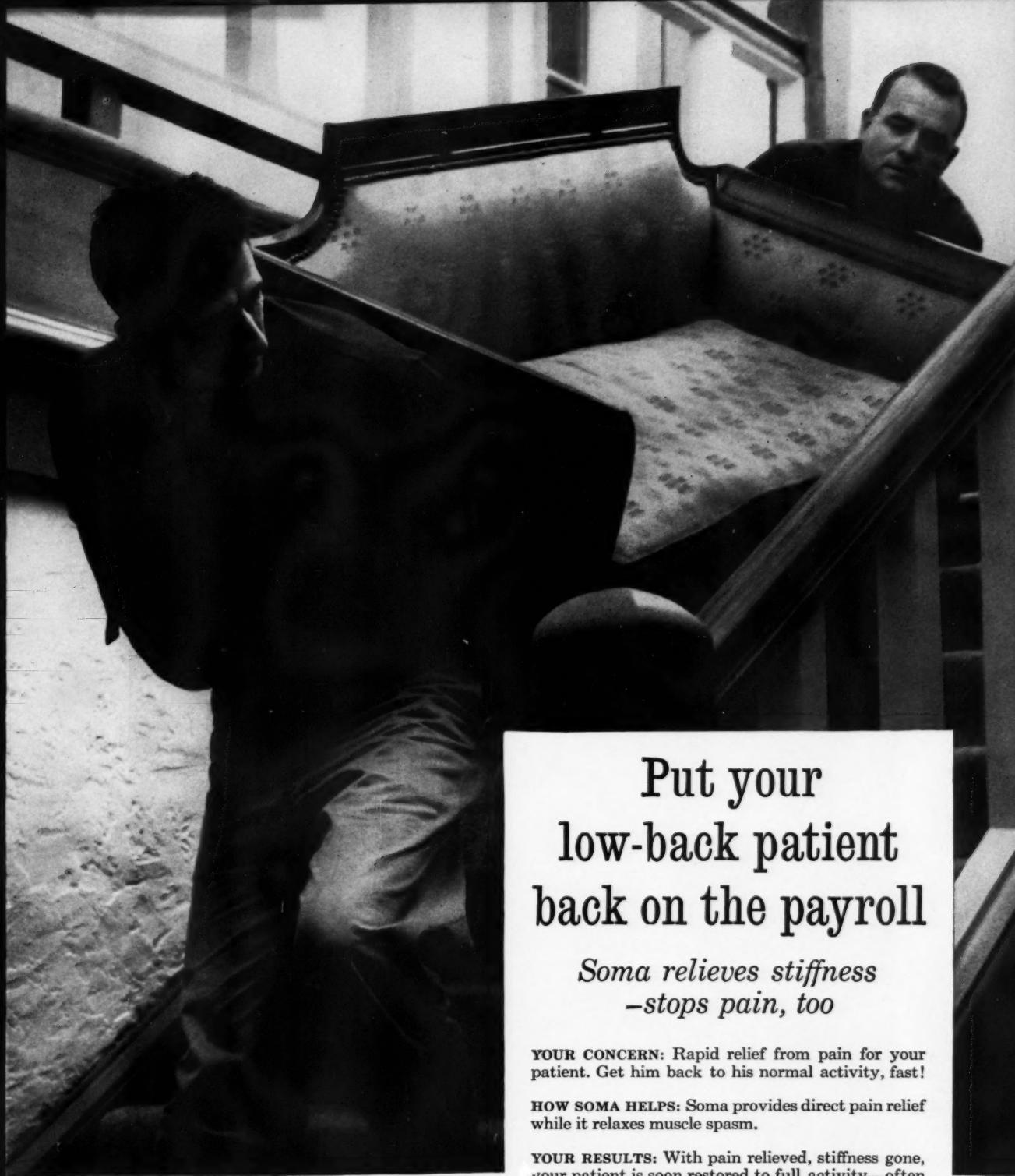
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AN IMPORTANT AID IN THE TREATMENT AND
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During and after an acute alcoholic episode, Librium relieves anxiety, agitation and hyperactivity, induces restful sleep, awakens the patient's desire for solid food and helps to control withdrawal symptoms. The complications of chronic alcoholism, including hallucinations and delirium tremens, can often be alleviated with Librium.

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NEW **Zentron**TM

comprehensive liquid hematinic

- corrects iron deficiency
- restores healthy appetite
- helps promote normal growth

* underweight, easily fatigued, anorexic—due to mild anemia

Each 5-cc. teaspoonful provides:

Ferrous Sulfate (equivalent to

20 mg. of iron)	100	mg.
Thiamine Hydrochloride (Vitamin B ₁)	1	mg.
Riboflavin (Vitamin B ₂)	1	mg.
Pyridoxine Hydrochloride (Vitamin B ₆)	0.5	mg.
Vitamin B ₁₂ Crystalline	5	mcg.
Pantothenic Acid (as d-Panthenol)	1	mg.
Nicotinamide	5	mg.
Ascorbic Acid (Vitamin C)	35	mg.
Alcohol, 2 percent		

Usual dosage:

Infants and children—1/2 to 1 teaspoonful (preferably at mealtime) one to three times daily.

Adults—1 to 2 teaspoonfuls (preferably at mealtime) three times daily.

ZentronTM (iron, vitamin B complex, and vitamin C, Lilly)

BEE STING

Triggering Fatal Sanarelli-Shwartzman Reaction

- Death from a bee sting is by no means rare and is always tragic. Demise is usually due to allergy or infection. Rarely, as in the instance described, is it due to a bacterial anaphylactoid phenomenon.

O. J. POLLAK, M.D.
JOHN A. J. FOREST, JR., M.D.

A six year old white boy had been stung by a bee on the lateral aspect of the right arm just above the elbow one week prior to admission. The area of the sting became red and swollen on the third day and began to hurt on the fifth day. By that time the boy broke out into hives, became feverish and toxic, vomited and had loose stools. His arm was stiff and swollen. He was treated with 300,000 units of procaine penicillin.

He had had measles and chicken pox and had not received any immunizations. In the family history were diabetes and asthma on the mother's side. The boy himself had no allergic manifestations.

On admission to the hospital, the patient was semistuporous and in great pain. He was drowsy and yawned. His respirations were labored and rapid. The right arm

was distorted with a brawny edema from shoulder to hand. There was no pitting and the entire arm was warm. The shoulder could be moved with pain. The elbow was immobilized with swelling. The right axillary lymph nodes were swollen. The entire body was covered with hives. The child appeared dehydrated. Dry rales and rhonchi were present throughout the chest, with dullness in the right lower lung posteriorly and laterally.

X-rays on the second day showed extensive mottling of both lungs, especially the lower lobes and more on the right side than on the left. Maximum mottling was in the right middle lobe. The right costophrenic angle and the diaphragm were obscured. A diagnosis of extensive bilateral pneumonia with right pleural reaction was made. The abdomen was distended by gas, and the question of ileus was raised but there was no intestinal obstruction.

Urine examination: albumin 2+, sugar negative, acetone 3+, 10 to 12 granular

Dr. Pollak, Mazaryk University '30, is pathologist to the Kent General, Milford Memorial and Beebe Hospitals and assistant professor of pathology at Hahnemann Medical College, Philadelphia.

Dr. Forest, Temple University '53, is attending pediatrician at Kent General Hospital and consultant to Beebe Hospital.

casts per high power field; specific gravity 1.005. Hematocrit 32%, hemoglobin 8.6 gm., or 55%; white blood cells 8,800 per cu. mm., with 25 band forms, 62 segmented cells and 13 lymphocytes. On May 10th, the hemoglobin was 9.3 grams or 60%, white blood cells only 4,250 with 2 metamyelocytes, 25 band forms, 39 segmented cells, 27 lymphocytes and 7 monocytes.

The working diagnosis was serum sickness secondary to bee sting, possibly due to penicillin; and pneumonia, possibly with secondary allergic effusion. The child was treated with phenergan, aspirin, sodium luminal, achromycin, tetracycline and prednisolone. During the hospital stay the hives increased in amount and the color of the skin became more livid. The next day, the arm was less swollen and the rash was subsiding. However, his respirations became increasingly grunty and labored, in spite of change of antibiotic therapy to chloramycetin and kantrex. The patient's temperature had decreased from 103 to 102.4, 101.6, 100.2 to 100.6°F. Terminally, the child was treated with adrenalin and coramine and was placed in an oxygen tent. In spite of intensive care and treatment the patient expired on the fourth day after hospitalization, apparently from pneumonia.

Autopsy

An autopsy was performed 90 minutes after death. The gross findings were:

Bronchopneumonia, confluent, generalized.

Bronchitis, purulent.

Infarctions, pulmonary, with abscesses.

Emboli, bacterial, pulmonary.

Pleurisy, fibrinopurulent and pseudomembranous, bilateral.

Scar, elbow, right.

Cellulitis, upper arm, right.

Edema, cerebral and meningeal.

Splenitis, acute.

Spleen, accessory.

Lymphadenitis, generalized.

Cyanosis, generalized.

Some of the findings warrant detailed description: The right upper arm was markedly swollen. Incision of the upper right arm resulted in a large amount of slightly yellowish fluid oozing from the cut surface. There was a pale, irregular scar on the outer aspect of the right elbow. The lymph nodes in the right axilla were moderately increased in size and consistency.

Both lungs were free. They were large and markedly indurated throughout. The consistency was irregular. Both lung surfaces, the right more than the left, were coated with abundant fibrin and pus. The color of the exudate was green, the layer up to 2 mm. thick. On sectioning, all five pulmonary lobes had the same mottled purple appearance. In the right middle lobe there was one area measuring about 3 cm. across with multiple small cavitations. These cavities were not demarcated and were, on the average, 5 mm. in diameter. Apparently this area was an infarction which had fallen apart. There were multiple other areas, wedge-shaped and indurated, purple, throughout the lung. These were hemorrhagic infarctions. There were spheric elevated areas present which measured up to 1 cm. in diameter. The color of these was yellowish-gray. The amount of scrapings from the surface was large and the color was yellowish. The air passages were slightly injected but there was no exudate on the mucosa.

The spleen was almost twice the expected size. The capsule was gray and smooth; the cut surface was a deep purple. The consistency was firm and scrapings were not excessive. There was one accessory spleen measuring 1 cm. in diameter, close to the hilus of the large spleen.

The lymph nodes in the right axilla were somewhat increased. The lymph nodes along the air passages were increased in number, size, and consistency and their color was red. The retroperitoneal nodes were normal. The number of lymph nodes in the abdominal cavity was fairly high and they measured up to 1 cm. in diameter.



FIGURE 1. Venous thrombus with bacteria (near top from area of bee sting). X15

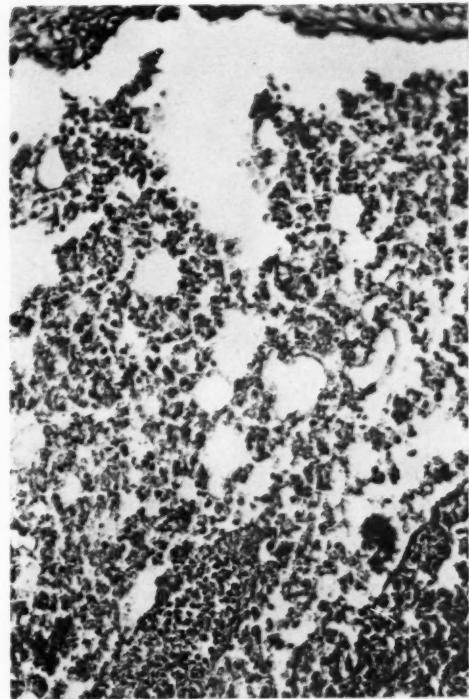


FIGURE 2. Vein (occupying most of photograph with bacteria (near the intima) from area of bee sting. Cellulitis. X300

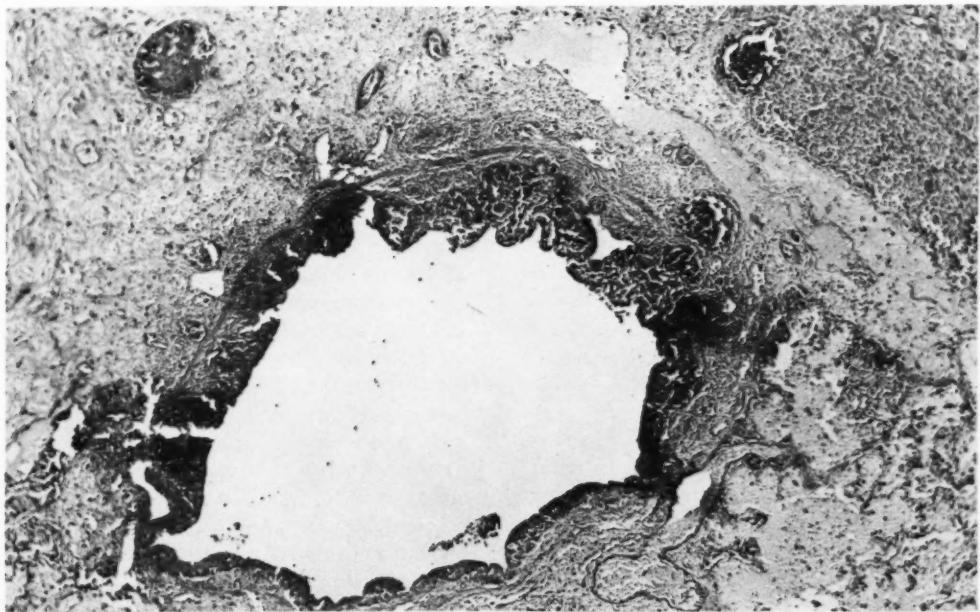


FIGURE 3. Bronchus with bacteria within the inflamed and swollen mucosa; three peribronchial arterioles with bacteria emboli. X45

The consistency was slightly increased; the color pink. Bone marrow was not excessive, the color was light red and the consistency was moderately soft.

Microscopic Findings

The microscopic findings confirmed the gross observations in all respects. The following were added:

1. Eosinophilia of an active, stimulated bone marrow.
2. Diffuse and pseudoadenomatous eosinophilia of the anterior pituitary lobe.
3. Edematous swelling of the intima of medium sized and small arteries in various viscera, especially those of the heart and lungs.
4. Venous thrombosis with bacteria in the area of cellulitis of the right arm.
5. Bacterial emboli within bronchial arteries.
6. Bacteria within bronchial exudate.

Again, some of the findings warrant detailed account: Tissue from right arm (insect sting): Diffuse edema, leukocytic collection in the connective tissue, swelling of nerves and nerve sheets, a thrombus with bacteria in one of the large veins.

In all five lung lobes the picture was identical and very colorful. Multiple hemorrhagic infarctions were present with blood effusion and abscess formation. Within the abscesses there were multiple clusters of dense basophilic material which, on higher magnification, was identified as clusters of cocci. The pleurae were severely thickened and the pleurisy was of a combined pseudo-membranous and fibrino-purulent type. There were multiple bacterial collections within the pleural exudate. In addition, there was diffuse confluent bronchopneumonia complicated by severe edema and hemorrhage throughout the tissue. In the bronchi there was abundant pus, again with clusters of bacteria. The inflammatory reaction around the bronchi was severe, forming a broad rim around some of the

bronchi with secondary abscess formation. Many of the bronchial arteries contained bacterial emboli. Within some of the veins and larger arteries were blood clots, some containing bacteria.

Discussion

The diagnosis of bronchopneumonia had been made clinically and supported by bacteriologic studies. It was confirmed at autopsy. The micrococcus was of the coagulase-positive *staphylococcus aureus* variety, productive of a strong hemolysin, and resistant to all antibiotics available for sensitivity study. Clinically, the illness was of an allergic type, starting apparently with the bee sting and followed by severe generalized hives. It had the character of serum sickness. While the sting could be considered as the second, or "provocative," insult the occurrence of the first, or "sensitizing," insult remained obscure. The pulmonary infection was held to be secondary, superimposed upon the allergic state.

The clinical concept had to be changed after completion of postmortem studies. Originally, the child had bronchopneumonia. The causative microorganism could be demonstrated within the bronchial exudate and also in the peribronchial exudate. At the time of the bee sting the extent of the respiratory infection may have been limited but the course might have become stormy because of the high virulence of the micrococcus, regardless of the bee sting. The sting occurred during the early stage of the respiratory infection, probably on the first day of the illness. The child scratched the injured arm and infected it with the same type of microorganism which had caused the pneumonia. No doubt, the boy had been stung by a bee before and he developed a not uncommon allergic reaction to the formic acid introduced into the body by the sting. However, from the morbid anatomic findings it is evident that the dominant events were cellulitis of the arm, mycotic venous thrombosis in the area of cellulitis and mycotic embolization of bronchial and pulmonary arteries resulting

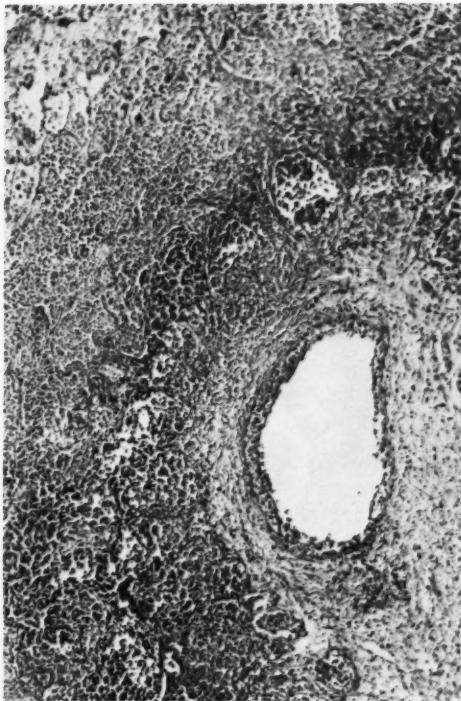


FIGURE 4. Pulmonary artery with intimal edema —histamine reaction; periarterial suppuration and pulmonary edema. X60

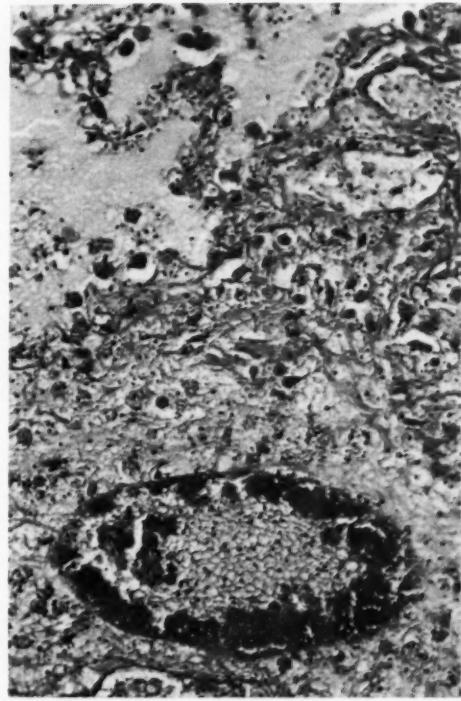


FIGURE 5. Pulmonary artery with bacterial thrombus; pulmonary edema with scattered micrococci. X170



FIGURE 6. Pulmonary abscess with central coagulation, within hemorrhagic pneumonia — infarction. X13

DELAWARE MEDICAL JOURNAL

in multiple infarctions. The hemorrhagic character of the bronchopneumonia developed on the basis of the Sanarelli-Shwartzman phenomenon.

S. S. Phenomenon

Several localized anaphylactic phenomena are known. Sanarelli's original experiment consisted of an intraperitoneal injection of a sublethal dose of *Vibrio cholerae* followed 24 hours later by an intravenous injection of a small dose of the same organism. This resulted in hemorrhage into the epiploë, severe intestinal congestion, even in exfoliative enteritis and acute nephritis. Shwartzman's reaction was based on intradermal injection of a filtrate of *Escherichia coli*, *Salmonella typhosa* or *Salmonella dysenteriae*, followed 24 hours later by an intravenous injection of analogous bacterial filtrates: The result was hemorrhagic necrosis at the site of the first injection. Both phenomena have been modified in various ways, experimentally. Their principle is identical and therefore one speaks of the Sanarelli-Shwartzman (S.S.) phenomenon.

The S.S. phenomenon resembles true anaphylaxis inasmuch as (a) there is necessity of sensitization, (b) the pathologic changes are the same regardless of the nature of the antigen and (c) a certain interval is necessary between the two injections. It differs from true anaphylaxis (a) since the inter-

val between the two injections is very short; mostly 20 hours, sometimes but 4 to 8 hours and never exceeding 3 days, (b) by the non-specific character evident from the fact that the material used for the sensitizing and for the provocative injections need not be the same and may even be of non-antigenic nature, (c) by the fact that it is impossible to desensitize an area and (d) through the cellular alterations initiated by the first injection, in contrast to humoral antibody formation by a true anaphylactogen.

Two theories have been advanced to explain these phenomena: that of plasmatic dyscolloidity and the histamine theory. The mechanism of the two is much alike. All large molecular complexes may irritate the vascular intima causing liberation of histamine from endothelium cells. Proteolytic events in tissue necrosis result in the appearance of propeptides in the blood stream and these act upon the endothelium cells. In this patient we had the unusual combination of a true anaphylactic reaction and a localized allergic reaction. In the anaphylactic shock, the bee sting represented the chemical provocative insult. In the fatal S.S. phenomenon, bacterial sensitization occurred by the intratracheal route and the bacterial provocative insult by the intravenous route from the site of the infected bee sting.

AMA ART EXHIBIT

The 24th Annual Exhibition of the American Physicians Art Association will be held from June 26th to 30th in New York City in conjunction with the Annual Meeting of the American Medical Association. The exhibit will include works of sculpture, painting, crafts and photography by physicians throughout the United States.

Further information can be obtained from Alfred A. Richman, M.D., Secretary, 307 Second Avenue, New York 3, N.Y.

CONGENITAL HYDROCEPHALUS AND MENTAL RETARDATION[†]

- The problems presented by a combination of mental retardation and congenital, progressing hydrocephalus are illustrated by an account of two cases.

ANTRANIG ARSLANIAN, M.D.
WILLIAM A. GOLICK, M.D.
O. J. POLLAK, M.D.

Two instances of mentally retarded children with congenital hydrocephalus studied at the Hospital for the Mentally Retarded are reported to provide a basis for evaluation of similar patients.

Case No. 1

This boy was born on January 26, 1956. He was an only child. An uneventful, full-term pregnancy was terminated by Caesarian section, on the basis of radiologic examination. The child's birth weight was 7 lbs. 11 oz. and hydrocephalus was noted at birth.

There was no family history of mental illness or retardation. The cause of death for the paternal grandfather was carcinoma of the stomach, for the paternal grandmother, carcinoma of the mouth and heart attack for the maternal grandfather. The maternal grandmother has had diabetes mellitus for two years. The child's mother was well. His father, under treatment for

diabetes, suffered a heart attack shortly before the child's birth.

The patient was admitted on April 4, 1956, and died on December 28, 1959.

A large hydrocephalus and moderate malnutrition were found on admission. The major fontanella was tense, bulging, 19x19 cm. wide. The minor fontanella was also protruding. The face was tiny and wrinkled. The eyes were sunken. The head was large, deformed, flattened to the left side. The scalp was thin and many prominent veins were seen.

Neurologist's report (July 5, 1958): Huge hydrocephalic skull with marked flattening and asymmetry. More protrusion on the right side than on the left. Wide open fontanella. No bruit heard over skull. All deep tendon reflexes strongly positive, Babinski positive, equal withdrawal from pin-prick.

Monthly progress notes indicated gradually increasing hydrocephalus, bleeding gums and irregular breathing suggesting

[†]From the Hospital for the Mentally Retarded, Stockley, Delaware. Dr. Arslanian is senior resident physician at the Hospital. Dr. Golick is clinical director and Dr. Pollak is consulting pathologist.



Case No. 1

damage to the respiratory center. The child cried when hungry; ate and slept well. Sensory reception seemed good.

Psychologist's report (September 28 and November 18, 1958): Vineland Social Maturity Scale, C.A. 2-8, S.A. 28, S.Q. 10. The child failed to balance his head or to roll over. Mental retardation was diagnosed.

The patient presented a nursing problem. Pressure sores developed on his head. Left-side convulsive seizures were noted. A day before demise he was quite dyspneic and the air passages filled with mucus. Death occurred in the oxygen tent.

Autopsy

There is a tremendous discrepancy between the size of the head and that of the body. The circumference of the head is 34 cm. The head is globular but somewhat flattened. The eyes are small. The nose is very small, as is the mouth. The ears are normally formed, small. The face has the appearance of a kite. In the occipital region there are multiple skin abrasions—decubiti. The head is partly soft. The soft areas are lateral to the midline.

The scalp is thin. There is very little subcutaneous tissue present. On removal

of the skin two large, roughly rhomboid, diamond-shaped areas are seen in the parietal regions. The bony defect on the left side measures 6x4 inches and that on the right side 6x4.5 inches. In the left soft area, where the bone is replaced by a membrane, there is close to the anterior lower pole of the rectangle a bone plate measuring 1 inch by $\frac{3}{4}$ inch. It is not connected to the bone proper. The fontanellae are closed and the sutures of the bones are firm. The thickness of the skull is from 2 to 3 mm. The dura is adherent to the skull. The arachnoid is likewise adherent. This resulted in laceration of the brain by the saw and in partial collapse of the brain due to leakage of intraventricular fluid.

The brain is markedly enlarged. Each hemisphere measures approximately 26x12x12 cm. The brain tissue which encloses the ventricles is thinned out to 1.5 cm. thickness or even less, over the entire brain. The convolutions in the medial portions of the hemisphere are almost obliterated. Where the convolutions are present they appear relatively normal. This is especially true of the temporal areas and of the temporo-occipital portions. The corpus callosum is thinned to a 1 mm. wide

white shell. The caudate nuclei are flattened out and are seen in the floor of the lateral ventricles. The thalamus is somewhat compressed. The optic chiasm is stretched, with considerable extension of the anterior and posterior perforating substance. Each lateral ventricle is estimated to have contained 2,600 ml. of fluid. The third ventricle is markedly dilated. The intermediate mass is stretched out to approximately 4 cm. in length. The aqueduct of Sylvius is dilated. The fourth ventricle is symmetrically enlarged. The major defect is a single cerebellum. There is no indication of embryologic growth into two hemispheres. The cerebellum is centrally located. The brachium pontis is present bilaterally and is symmetric. It is, however, reduced in size. Estimation of how much of the superior and inferior cerebellar peduncles are present is difficult. They are reduced in size, on both sides. In the single cerebellum two dentate nuclei are present. The arachnoid at the base of the brain is markedly thickened, opaque to translucent, leathery. Even after fixation, the brain is friable and on manipulation it tears easily. The pituitary gland is small, not remarkable.

Microscopic Examination

Multiple sections from various portions of the brain reveal retention of ependymal lining only in patches, under the lateral ventricular surfaces. The aqueduct is preserved. There is no evidence of granular ependymitis. The white matter of the corpus callosum is compressed to a thin, rather cellular mass. The white matter of the cerebral convolutions is somewhat edematous. There is irregular thinning and fragmentation with edematous spacing of all the cortex. The cortical cells are poorly preserved. There is an apparent decrease in the number of cortical cellular elements. The arachnoid is minimally thickened in some areas. There is some patchy infiltration with lymphocytes and monocyteid cells through the arachnoid. Sections through the caudate nucleus, thalamus and brain stem have normal appear-



Brain—Case No. 2

ance.. In a few areas in the thalamus and arachnoid there are foci of calcification.

Summary of Necropsy Findings

Bronchopneumonia, generalized; partly confluent.

Pleurisy, fibrinopurulent, upper lobes, bilateral.

Tracheobronchitis, purulent.

Hydrocephalus, internal; due to blockage of the foramen of Magendii.

Anomalous single cerebellum.

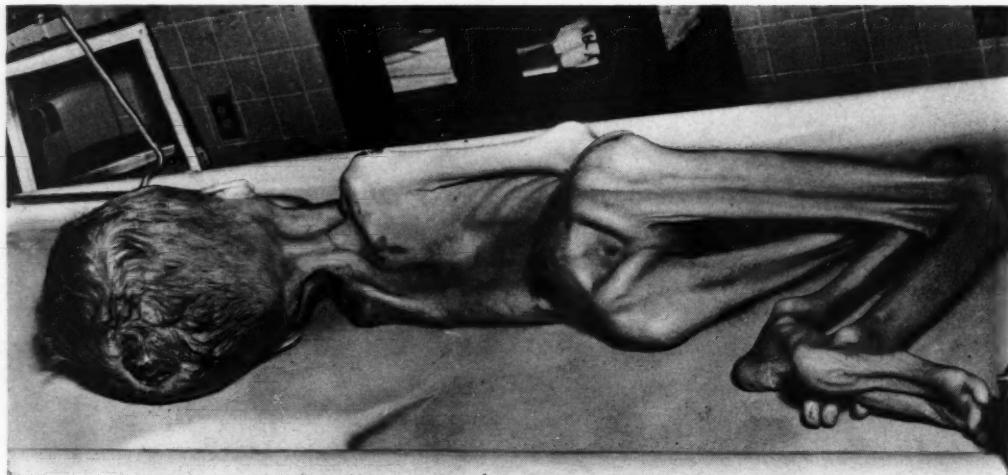
Arachnoiditis, chronic, with calcification.

Decubiti, scalp.

Case No. 2

This boy was born on March 16, 1948. A normal, full-term pregnancy terminated in difficult and prolonged labor requiring the use of forceps. Apparently, hydrocephalus was present at birth. A neurosurgeon diagnosed congenital hydrocephalus and ascribed it to atresia of the Sylvian aqueduct. In May of 1948, bilateral choroid plexus coagulation was performed.

There was no family history of mental illness or retardation. The paternal grandfather had died of atherosclerosis at age 78 and the grandmother of a heart condition at age of 74 years. The child's mother died in 1953 of an osseous neoplasm. His father has been in good health.



Case No. 2

The boy was first seen in the Mental Hygiene Clinic at Georgetown, Del., in 1953. The circumference of his head was 25½ inches, he was considered blind and mentally retarded. Psychologic examination was not feasible.

He was hospitalized on February 25, 1954, and he died on June 17, 1960. On admission, his head circumference was 26 inches. The head was large, symmetric, with horse-shoe shaped scars over the temples. Distended veins were seen especially over the frontal part of the head. The face was small. There was fixation nystagmus in all directions. Light and accommodation reflexes were absent. There was aphasia. There was no vision and hearing was very doubtful. Sporadic teeth were present. Elbows and knees were spastically contracted. The fingers were flaccid, the toes were stretched, the plantar arches were high. The lateral sides of the feet dropped. The deep reflexes were strongly positive. The child rolled on his stomach, could lift his head and arms but slightly and with difficulty. Leg movements were practically absent.

On x-ray the sella turcica was small, the cranial bulb was large, the sutures were not separated; there was hydrocephalus.

No intra-cranial calcifications were seen. An electroencephalogram (March 10, 1960) showed abnormally slow record for the age and a mild but consistent hemispherical asymmetry.

Neurologist's report (June 5, 1958): Circumference of head 34½ inches; strabismus without fixed direction; nystagmus in all directions of gaze. Incomplete, sporadic teeth. Flexor contraction of elbows and knees; hyperactive reflexes; equal perception to pin-pricks all over body.

From the day of admission the child had seizures which were controlled by medication with 15 mg. phenobarbital. In February 1958 he had chicken pox lasting one week. The child required total nursing care. While the hydrocephalus was progressing, the child did not develop during the more than six years of hospital stay. On admission, his weight was 40 pounds. It later became 28½ to 39½ pounds. The contractures increased. The child presented a feeding problem. In spite of frequent changing of position pressure sores developed on the sides of the head and later in other parts . . . especially over the hips. On December 12, 1959, the child's head started to fall backward. This was caused by increasing concave curving of

the vertebral column. Terminally, the head was almost touching the heels. Cachexia was progressing rapidly.

Autopsy

The body is that of a white boy measuring approximately 5'2" in length. Exact measurements are impossible, since all extremities are contracted and the back is concave. The head of the child is very large. The widest circumference is 27 $\frac{1}{4}$ inches. The head is misshaped, roughly spheric and the face is very small and triangular. There is a large area of decubitus measuring 2 inches across in the occipital region and another large area 1 inch across over the right temple.

The scalp is very thin and has been completely worn over the defects so that there are holes in areas of the decubiti. The fontanellae are closed. The bones of the skull are between 1 and 2 mm. thick. The dura is adherent to the bone. On opening, the dura is lacerated by the saw and the brain matter punctured. The brain forms a very large shell, not over 3 mm. thick. The "shell" is filled with clear, fairly dark, yellow fluid. The convolutions are flattened. The soft covers are thin and adherent to the convexity of the brain. At the base of the brain, mainly in the area of the pons and cerebellum but extending forward along the midline and involving the brain portions surrounding the infundibulum and the major nerves, the covers are thickened, cloudy and orange-brown discolored. The pituitary gland itself is congested, red. Its size is comparatively small. On opening of the brain all cavities are tremendously distended and the ependymal lining is injected, orange-brown discolored and a very fine granular throughout. This is true of all four ventricles. The cerebellum is fairly well developed.

Microscopic Examination

Apparent loss of brain substance but little, if any, disproportion between the layers. No alterations in the central ganglia. Non-specific granular ependymitis. Men-

ingeal congestion. In sections taken from the base, the meninges are markedly thickened, fibrosed.

Summary of Necropsy Findings

Cachexia.

Anemia

Hydrocephalus, internal and external, severe.

Ependymitis, granular, generalized.

Arachnoiditis, congenital, basal, brain.

Accessory spleen.

Kryptorchidism, bilateral.

Lordosis, spine.

Decubiti, large, multiple.

Discussion

The two cases described show the picture of unarrested hydrocephalics. In spite of all the medical and nursing care, they had a rather short life, gradually and slowly going downhill with diminishing body resistance, and very slow body (skeleton, musculature), development (small bodies with huge heads), pressure sores developing on the scalp, in spite of all care and medical attention. Finally the feeding became a real and difficult problem, resulting in lowered body resistance and inanition, thus becoming very susceptible to any infection, especially to respiratory and aspiration pneumonia.

A study of hydrocephalics in the Hospital for the Mentally Retarded shows the following picture:

1. 5% of the patients are hydrocephalics.
2. 50% of the hydrocephalics are arrested and it is interesting to note that 50% of the arrested have shown improvement; some talk and walk. Physiotherapy has helped a lot. There is also mental improvement.
3. 25% of all hydrocephalics have also spina bifida with entire paralysis of lower extremities.
4. Drainage operations for hydrocephalics (we have very few) results only in temporary improvement and the end results are not encouraging.

ENDOCARDIAL FIBROELASTOSIS

- Diseases of the heart account for many infant deaths. Diagnostic accuracy determines treatment. This disease has a fairly classical history and combination of signs, symptoms and x-ray findings.

DONALD L. HOWIE, M.D.

A CASE REPORT

Endocardial fibroelastosis, or primary endocardial sclerosis, is an entity of unknown pathogenesis and apparently uncertain definition. It exists as both a dilated and contracted type of heart disease. The following case history illustrates a typical instance of the more common type of dilated disease.

The patient was a five-month-old Negro girl. She was born as the sixth child with older siblings living and well. She had apparently had no significant illnesses since birth but fortunately a chest x-ray had been taken at about one month of age for unknown reasons. This showed a moderate sized heart of usual contour as in Figure 1. She had been on a full milk diet.

On admission two days before death, she was crying and coughing but appeared to be in fairly good general condition. There was no cyanosis, but the throat was red and contained some thick mucus. There was bronchial breathing over the left lung with dullness. There was a slight dermatitis of the body which had apparently been of the "heat-rash" type and was clearing. The initial impression was pneumonia of the left lung and the child was treated with Crysticillin, oxygen and later Chloro-

mycetin. A second x-ray was taken with the dominant finding being the marked globular enlargement of the heart seen in Figure 1. Diagnosis was changed to congenital heart disease but no murmurs were noted even on reexamination.

White blood cell count was 23,000 with 46% segmented neutrophiles, 14% band neutrophiles, 32% lymphocytes and 6% monocytes. Hematocrit was 32%. On the second day temperature was still 102 degrees. Breathing was rapid. Respiratory difficulty worsened and the child died.

At autopsy the child appeared well developed and well nourished. The fine rash consisted of small uniform scabs with pallid areas in the dark skin. These were present over the entire body. No other lesions could be found on the skin. There was no excess fluid in any body cavity. Lungs had wedge shaped areas of condensation and hyperemia without grossly apparent premortem clots. Bronchi were clear. Heart weighed 75 grams and had a globular shape. There was massive dilation of the left ventricle with the wall averaging 0.8 cm. thick. The inner part of the left ventricle was gray and fibrotic with this change extending to a depth of 0.2 cm. maximum. Greatest change was at the upper interventricular septum. Some grayish fibrosis was present lining the left atrium. Valve leaf-

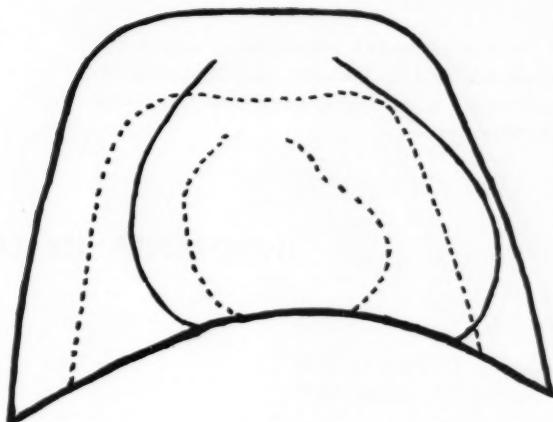
Dr. Howie, George Washington University '49, is associate pathologist to Kent General, Milford Memorial and Beebe Hospitals and is a Diplomate of the American Board of Pathology.

Figure 1 Chest X-ray outlines.

Dotted: Heart and thorax at one month of age.

Solid: Outline of five months, the day before death.

Maximum horizontal diameter of dotted cardiac outline is 5 cm.



lets were well formed and not thickened. There were no abnormal communications between the two sides of the heart and the foramen ovale and ductus arteriosus were closed. Coronary arteries were usual with two standard aortic orifices. Liver was somewhat pallid. Mesentery contained some large lymph nodes. Adrenals were somewhat small, pale and friable.

Microscopically, the presence of the fibrous endocardial membrane was confirmed, without deep myocardial fibrosis or inflammation. Preserved myocardial fibers were quite uniform.

Lungs showed edema, pigmented macrophages, atelectasis and some ecchymosis. Liver had some central lobular congestion, cellular necrosis and neutrophile infiltration. Lymph nodes were somewhat hyperplastic. Spleen was passively congested. Adrenal was well preserved.

The cause of death was cardiac failure. Whether this was precipitated by another disease such a pneumonia or possibly chicken pox is unknown.

The origin of the failure can be attributed to either fibrosis around thesbian veins with altered myocardial nutrition or simple mechanical interference by the fibrosis with left ventricular contraction and expansion.¹ The pathogenesis of the disease

itself is quite obscure. A somewhat similar disease has been noted with unusual frequency in Uganda² and was thought to be related to nutrition. Anoxia is blamed for infantile cases in another paper.³ This could originate in anomalies, premature foramen ovale closure or valvular atresias. An inflammatory origin has been dismissed by most investigators.¹

Diagnosis in life can be made in children of this age group where the finding of a globular heart, rapidly developing failure and absence of murmurs coexist. Evidence of previously good cardiac status strengthens the diagnosis. Treatment has not been notably successful, although previous experience indicates some temporary help from digitalization. Adrenal cortical hormones have apparently not been helpful.

Summary

A case of endocardial fibroelastosis is reported. Diagnosis is strongly suggested in life by the presence of rapidly developing cardiac failure, globular heart and absent murmurs. Etiology is unknown and treatment is not notably successful.

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- In this controlled investigation two active hypnotics and a placebo are compared for their effect in managing sleep disorders in the geriatric patient.

INSOMNIA IN THE AGED[†]

ALFRED T. PEPINO, B.A.
WESLEY W. BARE, M.D.

More than \$100,000,000.00 is spent on soporifics in the United States each year.¹ Much of this is for people suffering from insomnia, yet relatively little attention is given to this symptom in major medical texts. Medical schools pay little attention to its treatment, and even less to its cure.

The geriatric patient presents a special problem when it comes to sleep disorders. We have all heard the old saying about not giving barbiturates to the elderly patient; but in reviewing the literature we were unable to find a controlled study showing just how well or how badly the geriatric patient does react to barbiturates given in hypnotic doses. To be sure, we have all seen excitement, confusion or stimulation with this group of drugs. But such reactions are by no means limited to the aged. Consider, for example, the prenatal patient of several years ago who received moderately large doses of short-acting barbiturates to produce analgesia in labor. This method was soon discarded because of the large number of patients who "climbed the walls" and were unmanageable. Considering this, is it really any more unwise to administer

barbiturates to the elderly person than it is to the younger? It is the purpose of this paper to determine this.

What Is Insomnia?

Insomnia may be defined very simply as the inability to either fall asleep or to maintain sleep adequately. The basic physiology of sleep is still not known, although intensive research into this body change has been begun during the past several years. The amount of sleep necessary varies with each person. The old cliche has it that the necessary amount is "six hours for a man, seven for a woman, and eight for a fool." If this be so, then many of us most certainly are fools.

Solomon¹ has pointed out that there are five major factors that can interfere with sleep, and, of course, combinations of these: (1) Insufficient fatigue; (2) excessive rest; (3) excessive tension; (4) insufficient satisfaction of tensions; (5) tensions that outweigh satisfaction causing a chronic state of anxiety.

The first two of these categories are easily managed clinically and call for neither psychotherapy nor drugs. The bulk of insomnia problems fall into those caused by too much tension or too little satisfaction. The amount of sleep needed, therefore, depends upon the amount of mental and physical exhaustion present at any given time.

[†]From the Methodist Home for the Aged, Philadelphia. Paper presented at the 9th Annual Meeting of the Academy of General Practice, Wilmington.

Dr. Bare, Jefferson Medical College '52, had three years residence in obstetrics-gynecology at Methodist Hospital, Philadelphia, is certified by the American Board of Obstetrics and Gynecology and is in private practice. Dr. Bare holds staff appointments at Methodist Hospital and Einstein Medical Center; has published extensively and is abstract editor for Excerpta Medica.

Classified Into Three Types

Insomnia has been classified in many ways, but we believe it is best divided clinically into three types depending upon the time of occurrence: (1) Initial insomnia, or delayed onset of sleep; (2) Intermittent insomnia, or restless, interrupted sleep; (3) Terminal insomnia, or early morning wakening.

Initial insomnia is usually due to anxiety and worry. Emotionalism is the enemy of sleep and is the most common cause. If it becomes chronic, sleeplessness accentuates the nervous state of the patient, and a cycle of sleeplessness, fear of sleeplessness, and increasing insomnia becomes established.² *Intermittent insomnia* also arises from worry, but other factors may also play a role. Intemperate eating or drinking habits are frequently a cause. Disease states, especially those characterized by dyspnea, pain, or other discomfort often lead to interrupted and restless sleep. *Terminal insomnia*, the type seen most commonly in the well adjusted geriatric patient, is usually due to inactivity. These people take "cat-naps," and many go to bed early so that they have had adequate rest before the usual hour of wakening, then complain of poor sleep.

From a treatment standpoint, it is important to understand the type of insomnia one is dealing with. The treatment must be individualized, and every effort should be made to determine the underlying cause of anxiety and remove it. Too frequently this is impractical or impossible in the aged. At the Methodist Home for the Aged in Philadelphia we commonly find our geriatric patients presenting themselves with no real organic disease, or organic disease that is well controlled, yet feeling far from healthy. Depressions, confusion and anxiety are prevalent, and not a day goes by without several people complaining of inability to sleep. In this age group, particularly with its high incidence of cerebral vascular disorders, psychotherapy is impractical. We are therefore almost forced to resort to

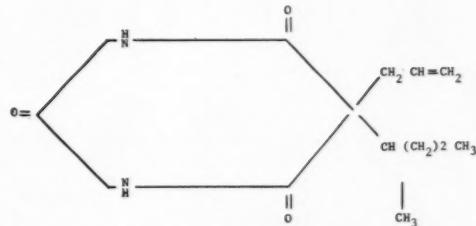


Figure 1
Structural Formula
of Secobarbital

tranquillizers during the day and hypnotics at night.

So many soporific preparations are on the market that the choice of one is difficult. We believe it is better to become thoroughly familiar with a few than to constantly try new preparations and not know any well. Also, in an institution it is impractical for economic reasons to stock several different preparations that can all be used for the same purpose. In order to find one that was safe, effective, and inexpensive we undertook a controlled study.

Materials

The study was carried out on 52 geriatric patients who complained of inability to sleep. The youngest studied was 72, and the oldest was 97. A total of 168 records was kept on the 52 patients, each record covering a 24 hour period. Three separate preparations were used. The first was a tablet containing 100.00 mg. of secobarbital; the second was an identical tablet containing 60.0 mg. of secobarbital and 100.0 mg. of phenyltoloxamine in a timed-release form;* the third tablet was a placebo.

Secobarbital (Figure 1) was chosen for two reasons. First, it is probably the most commonly prescribed hypnotic in this country. Second, it is a typical short-acting barbiturate and would give typical results in the geriatric patient for that group of drugs.

*Supplied as "Hyptran" by Wampole Laboratories, Division of The Denver Chemical Company, Stamford, Connecticut.

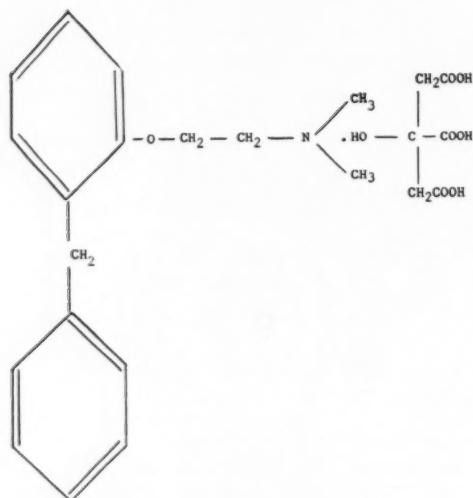


Figure 2
Structural Formula of Phenyltoloxamine

The combination tablet also contained secobarbital, but in combination with phenyltoloxamine (Figure 2). The latter is a sedative anti-histamine which potentiates barbiturates. It is not a phenothiazine and jaundice, hypotension, and other reactions of that group are not seen.³ The tablet itself is a dual release preparation. In the outer layer of 60.0 mg. of secobarbital and 25.0 mg. of phenyltoloxamine. This drug, originally developed for its anti-histaminic effect, was found to be an efficient sedative and is now used almost exclusively for that purpose. The addition of secobarbital allows for a rapid onset of action.

The third tablet was a placebo. Since many of the causes of insomnia are psychogenic in origin it is reasonable to assume that administration of even an inert substance will produce improvement in some persons merely by the power of suggestion. Accurate evaluation of the two active drugs would have been impossible without considering the patients who would experience improvement just by receiving a pill.

Method

A strict alternating basis was used. The tablets were identical and coded so that the nurses giving the preparation did not know which drug was which. At half-hour intervals after administration of the tablets each patient was observed by the physician on service and records kept with regard to presence or absence of sleep, restlessness, thrashing around, noisiness, and coherence. On the following morning the same physician evaluated each patient for evidence of headache, drowsiness, nausea, nervousness, visual disturbances, paresthesias, and any other indication of "hangover." Each person's subjective opinion of the night's sleep was also recorded. After completion of the study, some three and one half months later, the code numbers of the drugs was broken and the records compared.

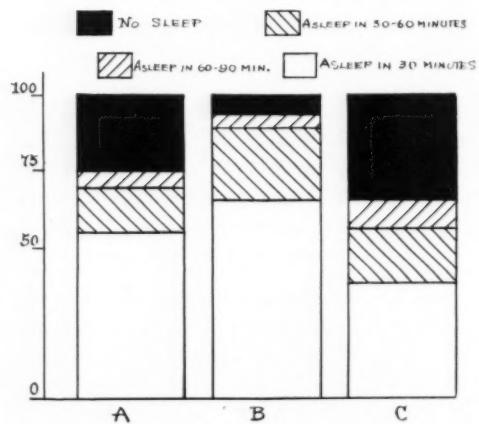


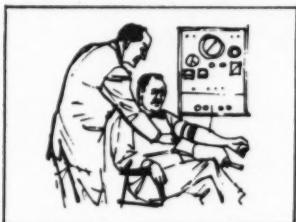
Figure 3 — Falling Asleep
Legend: A — Secobarbital, B — Secobarbital plus Phenyltoloxamine, C — Placebo

Results

Figure 3 shows the data covering the time of falling asleep. 74% of patients receiving secobarbital were asleep within 90 minutes, and 26% were not. Of the latter group, several dropped off to sleep sometime later during the night, but these cannot be considered as sleep directly induced by the barbiturate, since its onset of action

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is usually within the first hour. In the same time period (90 minutes), 92% of patients who received the combination were asleep, and 8% remained awake. Interestingly enough, 65% of the placebo group were asleep within 90 minutes. This leaves 35% who got no particular effect. The differences among the three groups are statistically significant.

The mean length of sleep induced by secobarbital was $5\frac{1}{2}$ hours; with secobarbital plus phenyltoloxamine it was $7\frac{1}{4}$ hours; with the placebo it was 5 hours.

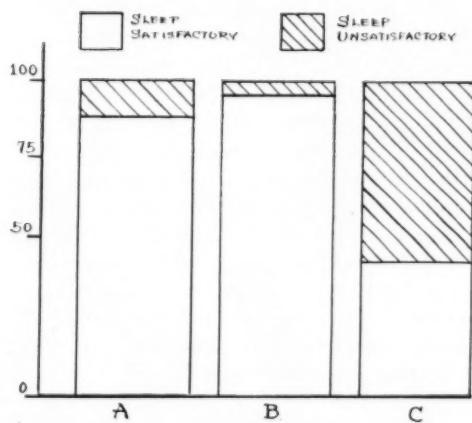


Figure 4 — Patient's Opinion of Sleep

Legend: A — Secobarbital, B — Secobarbital plus Phenyltoloxamine, C — Placebo

Figure 4 shows the patient's own subjective opinion of sleep with the various drugs. The striking finding here is that seen in the placebo group. Almost half (44%) stated that they had not slept well and more than half (56%) slept well. Administration of a hypnotic decreased the incidence of unsatisfactory sleep to 12% with secobarbital and 4% with the combination.

The big objection to barbiturates in the aged has always been the possibility of stimulation and excitement instead of the desired sedation. Figure 5 shows our findings. Secobarbital produced reactions that were considered as stimulation in 17%. The

combination tablet led to similar reactions in 8%, and 16% of those who received placebos were restless or excited. From this one could readily conclude that secobarbital is not much more likely to cause excitability than an inert substance. However, many of these patients had chronic disease characterized by pain or discomfort that would lead to restlessness. During the study no routine analgesics were given to any patient, and the figures found with placebos are therefore not as accurate as they might be if pain were relieved. Considering this, it must be admitted that 17% of elderly patients receiving secobarbital will be stimulated rather than sedated. Addition of phenyltoloxamine to the barbiturate will decrease the incidence of undesirable reactions to a more acceptable 8%.

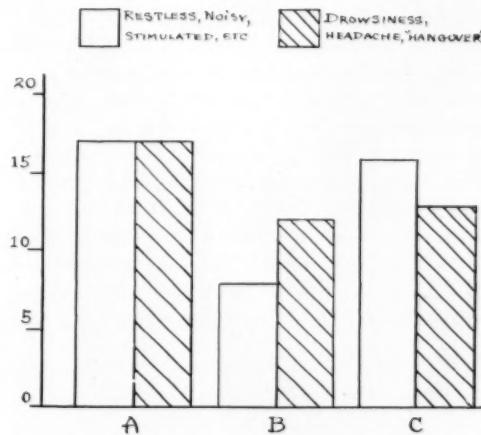


Figure 5 — Type of Sleep and Condition the following Day

Legend: A — Secobarbital, B — Secobarbital plus Phenyltoloxamine, C — Placebo

The incidence of "hangover" on the following morning is also shown in Figure 5. Secobarbital, despite its rapid excretion, produced headaches, nausea, drowsiness, or other latent symptoms in 17%. This percentage is exactly the same as that found for excitatory reactions during the night. Review of the records failed to show any

DELAWARE MEDICAL JOURNAL

correlation between the two, and the figures are coincidental. Adding phenyltoloxamine to the secobarbital decreased the incidence of "hangover" to 12%. It is interesting to note that 13% actually got a "hangover" from placebos. Unless this is on a psychogenic basis, we have no explanation for it, but it makes one wonder about the validity of the complaints in the groups who received active medication.

Other than these latent symptoms no side effects were found with any drug. No case of either addiction or habit formation developed. At the conclusion of the study a complete blood count and urinalysis were done on all patients and all were within normal limits.

Comment

Insomnia will probably always be a common complaint of aged patients. With the gradual increase in life span, chances are that it will become even more prevalent. When the patient has obvious organic disease that prevents him from sleeping the treatment is clear. Attention to proper medication for systemic disease, adequate fluid and nutritional intake, and general well-being will allow for peace of mind in many patients who would otherwise have difficulty in sleeping. The use of hypnotics should be reserved for those who cannot be controlled by more conservative means.⁵

The administration of secobarbital, and perhaps other short-acting barbiturates as well, is likely to lead to undesirable reactions in about one out of five aged patients. The addition of phenyltoloxamine to secobarbital decreases the likelihood of these reactions, allows for a prompt, more satisfactory sleep, and lessens the incidence of "hangover" the following day. The combination of these drugs in a single tablet is a safe and effective hypnotic for the

elderly, and is without significant side effects.

Summary

The soporific effect of three separate preparations was evaluated in 56 geriatric patients in a home for the aged, using the "double-blind" technique. Preparation No. 1 was a tablet containing 100.0 mg. of secobarbital; No. 2 was a combination tablet containing 60.0 mg. of secobarbital and 100.0 mg. of phenyltoloxamine in a timed-release form; No. 3 was a placebo. The dose of each was one tablet at bedtime.

It was hardly surprising that the effect of both active tablets was better than inert pills, but the effect of the combination tablet was better than that of the barbiturate alone. The combination produced sleep in 92% of patients, compared to 75% with the barbiturate alone. There were less undesirable reactions with the combination than with secobarbital alone, and the incidence of "hangover" was reduced from 17% to 12% by addition of phenyltoloxamine. The incidence of hangover for patients receiving only placebos was 13%, a finding difficult to explain.

The decreased incidence of side effects and latent symptoms the following morning indicate that the combination of secobarbital and phenyltoloxamine in a timed-release tablet is a safe and effective preparation for the management of sleep disorders in the aged.

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ANNUAL MEETING, Medical Society of Delaware
Wilmington, Delaware

October 27, 1961

SOUP to ALMONDS

- Undiagnosable ills are problems in medical practice. This case presents many obscure complaints, some referable to a recognized disease, and others due to a cause demonstrated only after death.

DONALD L. HOWIE, M.D.
HILLEGONDA MOLLER, M.D.

Obscure illnesses and bizarre complaints are commonly seen in medical practice. Often, a definitive diagnosis cannot be made and symptomatic therapy meets with varying success. The following case illustrates one possible termination of such a problem.

Case Report

A fifty year old white man was first seen at the Beebe Hospital with a chief complaint of weakness and dizziness coming on in "attacks" over a period of two years. These spells were accompanied by sharp pains in the chest and by some nausea. He had noted a bitter taste in his mouth. There was history of urinary urgency. He was slightly stuporous but had taken sleeping pills. On physical examination the tongue was reddened; his blood pressure was 170/140 mm. Hg.; there was an apical diastolic murmur; the prostate was slightly enlarged. Blood urea nitrogen was 18 mg. per 100 ml. and the urine had a specific gravity of 1.016 and was free of albumin and sugar. Within about five days the patient felt much better and was discharged.

He was next seen by several consultants who noted the history of dizziness and of

severe pulsating headache. There was photophobia and nausea. Neurologic examination was non-contributory. Spinal fluid and electroencephalogram were within normal limits. No definitive diagnosis could be made. The patient was treated with Equanil.

He was next seen at the hospital four months after the first admission. He was admitted in an "hysterical stupor." He was a chronic worrier. His wife stated he had high blood pressure but would not take his pills regularly. He had taken ill with abdominal pain during supper. Physical findings were limited to a systolic souffle and a loud second heart sound. The next day the patient claimed that he felt fine and wanted to go home. He was discharged with the diagnosis of rheumatic valvular disease plus hysteria.

The last admission was eight days later. He was brought in unconscious. About 5:00 p.m. he had come home from work complaining of tightness in his chest. He took his Equanil and Maalox and had a small supper of asparagus soup and coffee. Shortly thereafter he began gasping for breath and was given 50 mg. of Demerol. On admission he had slow respirations and

Dr. Moller, University of Leiden '54, Netherlands, is a resident, Beebe Hospital.

a peculiar bitter-sweet odor to the breath. Although respiratory difficulty increased his finger nails and lips were red and the skin of the legs was blotchy red. The pupils were large and did not react to light. There was foam between the lips. A grade II systolic heart murmur was noted. The heart rate was 76 per minute and the blood pressure was 90/50 mm. Mg. The patient died within one-half hour, with the heart continuing to beat for a short period after breathing ceased.

Autopsy

There was external bloody congestion of lips and of finger nails, with a pink hue to the mild cyanosis. Internally, there was no excess cavity fluid.

The heart weighed 310 gm. and contained fluid, red blood. There was mild sclerotic thickening of the mitral valve with some shortening of the chordae tendinae. There were no anomalies. The myocardium was well preserved. The lungs showed dependent congestion.

The esophagus was intact. The stomach showed marked hemorrhagic erosion of the edematous rugae. It contained about 100 ml. of asparagus soup. The rest of the bowel was not remarkable. The liver and the pancreas were well preserved. The kidneys had minimal cortical scarring. The adrenals were intact. The brain was slightly edematous and there was minimal atrophy of the frontal convolutions.

Microscopically, there was some scattered pulmonary fibrosis and some fibrous thickening of the mitral valve. There was increased connective tissue in the portal areas. The gastric rugae showed hemorrhagic necrosis. There was mild arteriolar nephrosclerosis and mild chronic prostatitis. There was some cerebral arteriosclerosis with basophilic granules near vessels in the basal ganglia.

Because of the resident physician's tentative diagnosis and the autopsy finding of

a gastritis, gastric contents were treated with ferrous sulfate, ferric chloride and hydrochloric acid. The typical ferriferrocyanide color resulted. Findings of cyanide were confirmed in the FBI laboratory. Tests for arsenic were equivocal.

Discussion

While cyanides are most frequently taken suicidally and sometimes ingested accidentally, homicidal poisoning is quite infrequent. Only four cases have been recorded in the medical examiner's files of New York City for the years 1918 to 1951.*

However, search of the patient's premises yielded both cyanide and arsenic preparations. The wife later admitted administering cyanide to her husband hoping to make him just a "little bit sick." There was no information available on the previous illnesses but the peculiar symptoms and their intermittent-acute nature suggest previous poisoning, perhaps with arsenic. Suspicion of poisoning was not aroused until the final illness. Had it been, a fatal outcome might have been prevented.

Unfortunately, cases of homicidal poisoning are missed, largely because the physician is not suspicious or is too ready to sign a death certificate as "coronary thrombosis." Had the wife not signed permission for autopsy in this case it is entirely possible, if not probable, that an autopsy would not have been ordered under Delaware's present peculiar and inexcusable medico-legal state of disorganization and that this case of homicide would have gone undetected.

A higher index of suspicion on the part of physicians and more autopsies where the cause of death is not known with some degree of certainty will undoubtedly reveal more cases of criminal and homicidal poisoning.

*Gonzales, T. A., Vance, M., Helpman, M., and Umberger, C. J.: Legal Medicine, Pathology and Toxicology, 2nd edition, Appleton-Century-Crofts, Inc., New York, 1954, p. 804.

CLINICO-PATHOLOGIC CONFERENCE

- A protocol full of "red herrings" is analyzed by surgeons, internists, pathologists, an obstetrician-gynecologist and a pediatrician. Which of these made the correct diagnosis?

CAPT. STUART G. WEISFELDT, MODERATOR

The following Clinico-Pathologic Conference was held at the U.S. Air Force Hospital, Dover, Delaware, September 22, 1960. The conference was opened by Dr. Donald P. Elliott presiding.

DR. ELLIOTT: An 82 year old widow was admitted because of an abdominal tumor present for six weeks. Her present illness was discovered after an accident during which she was thrown from an automobile but was not severely injured. She had lost 58 pounds over a period of four years. This exceeds the usual weight loss encountered with advanced aging. The patient's father, husband and one child died of tuberculosis. She had had Paget's disease for some time. Physical examination revealed a thin, elderly, white woman. She had a deafness of the right ear, distension of neck veins, limited chest expansion, a systolic heart murmur, an enlarged liver and a blood pressure of 140/60 mm. Hg. There was a football-size fluctuant mass in the right lower abdominal quadrant, extending into the thigh and causing swelling and cyanosis. The mass was apparently filled with dark fluid as it was opaque to transillumination. On rectal examination, the mass was felt in the right adnexa, possibly in the vicinity of the ovary, with suggestion of studding of rectum. This would indicate a spreading growth. Radiologically, the chest was nor-

mal, there was Paget's disease of pelvic bones, a normal intravenous pyelogram, and a normal barium enema except for evidence of extrinsic pressure on the cecum. The patient apparently tolerated her disease fairly well.

We were faced with a frail, elderly woman with a number of conditions.

1. Paget's disease is not unexpected in a woman of 82 years. Pathologic fractures or urinary calculosis resulting from increased calcaruria are common complications. Neither of these were present. Otosclerosis is another complication and could explain the patient's deafness. Increased blood flow to affected bones often produces an arterio-venous fistula-type abnormality which can predispose to congestive heart failure. One, then, could explain the patient's widespread pulse pressure, distension of neck veins and hepatomegaly on the basis of Paget's disease.

2. Although white blood cells were present in the urine, her urinary tract infection seems of small importance. Since the liver produces albumin a reversed albumin-globulin ratio can be caused by hepatitis, carcinoma of the liver, etc. Another cause of hypoalbuminemia is prolonged heavy loss of albumin through the urinary tract. Since this was not the case it is thought that the patient's hypoalbuminemia resulted from

liver damage due to chronic passive congestion. Liver derangement was suggested by a serum albumin of 2.2 gm. and a globulin of 4.2 gm. per 100 ml.

3. The patient was anemic. There was a disproportion between the hemoglobin value of 66 per cent and the red cell count of about 4,000,000 per cu. mm. Hypochromic anemia could be nutritional, on iron deficiency basis, or could be due to toxic depression of the bone marrow secondary to uremia or chronic infection. There was leukocytosis with a marked "shift to the left."

4. The recent injury played little part in the woman's illness although the mass apparently developed after injury. This mass was located in the region of the femoral triangle. It is possible that the injury precipitated a femoral hernia and that a previously unrecognized abdominal mass herniated. Thick, foul-smelling fluid had been aspirated from the mass.

5. The patient's exposure to tuberculosis is of interest. She had a chronic wasting illness and had lost 58 pounds in four years. Her liver derangement and heart failure could be secondary to amyloidosis from chronic infection. Hyperglobulinemia is commonly found in tuberculosis. Tuberculous peritonitis is a chronic disease and it can present itself as a loculated abdominal mass. What an attractive possibility to explain all of this woman's illness on the basis of tuberculosis!

Involution Of Organ Systems

She probably did not have tuberculosis. Several organ systems could be involved in the abdominal mass. Her physician thought first of the urinary system. An intravenous pyelogram was normal eliminating renal origin of a large tumor. On barium enema the large bowel was normal but for extrinsic pressure on the cecum. Mucocele of the appendix must be considered since thick mucoid material was aspirated from the mass. I am not aware of a mucocele of this size. Of 55 pancreatic cystic tumors

studied at the Mayo Clinic 24 were pseudocysts, 20 were retention cysts, 7 were cystadenoma and 4 were cystadenocarcinoma. The location of our patient's mass does not support pancreatic origin.

The ovary gives rise to many non-neoplastic and neoplastic cysts. Benign ovarian cysts are the by-product of a functioning ovary. They can be excluded because of the patient's age. The same applies to cystic endometrioma. Classification of cystic ovarian tumors is not uniform. Most pathologists agree that there is no sharp demarcation between cystoma and cystadenoma and that the amount of cellular elements in a cystic growth is a matter of degree rather than of different types. The serous cystoma or cystadenoma are potentially dangerous neoplasms. About 25 per cent become malignant. These tumors do not ordinarily attain a great size. Pseudomucinous cystadenoma would be more likely in our patient. They can become very large and very heavy. One of the items of interest in the protocol is the fact that the aspirated fluid from the cystic mass had the odor of hydrogen sulfide. I have encountered perirectal, abdominal and abscesses, many of them with foul and putrid odor but none with hydrogen sulfide odor. In Best and Taylor's text it is stated that this gas is liberated during putrefaction of sulfur containing organic compounds.

Methionine and cystine are common in our diet and are distributed throughout the human body. Mucin contains muco-sulfuric acid. We may deal with an infected mucinous cystic tumor. Only about 5 per cent of mucinous ovarian tumors undergo malignant change. In view of the rapid growth of this mass and of the evidence of studding of the rectum, I am choosing the diagnosis of malignant pseudomucinous adenoma of the right ovary.

Retroperitoneal Or Intraperitoneal

DR. EISENBERG: Dr. Elliott's analysis of the origin of hydrogen sulfide is quite

scholarly. One would have to postulate some extension of an ovarian neoplasm beneath the inguinal ligament in order to explain the presence of the mass on the medial aspect of the thigh. This would be most unusual. The patient would most likely have both a femoral hernia and an ovarian tumor. With an ovarian neoplasm of the described size the absence of ascites seems rather unusual. Ascites is frequently the presenting sign of ovarian neoplasm and usually one of the early manifestations of its extension. It would be helpful to know whether or not the mass was retroperitoneal. Obliteration of the psoas shadows and some other radiologic examination would have helped us to determine the position of the mass relative to the peritoneal cavity. If it were retroperitoneal, I would be inclined to think of a cystic tumor originating perhaps from muscle or nerve. If the mass were intraperitoneal I would have to go along with the diagnosis of an ovarian tumor with secondary infection and possibly extension beneath the inguinal ligament through a femoral hernia.

Ovarian Neoplasm Possible

DR. BELKIN: The diagnosis is obscure. I am interested in the comment that Paget's disease causes a high cardiac output problem. This seems unusual. Most elderly patients with localized pelvic Paget's disease probably have very few cardiac manifestations. The patient had a pulse rate of 84 per minute; she had no peripheral edema; she did not have pulmonary symptoms although she had neck vein distension. The respiratory rate was normal. I rather doubt that she had congestive failure either due to cardiac output or due to other causes. If she had an intraabdominal malignant neoplasm this could account for hepatomegaly due to metastasis. Hypoalbuminemia could be due to a chronic disease or due to marked weight loss on the basis of malnutrition. I am impressed with the hematologic data which we find in many protocols, particularly in those that are not of recent vintage. In this protocol, the only data available are a meaningless hemo-

globin value of 66 per cent and two nearly normal red cell counts of about 4,000,000 per cu. mm., each. We have really no idea whether the woman was anemic or not. Certain consideration should be given to the family history. Her history of weight loss must extend over quite a period of time. Tuberculosis or syphilis are the only two infections that might create a chronic picture and produce a virtually symptomless mass. A "cold abscess" should be considered although this is unlikely in view of the character of the aspirated material. I agree that lesions of the gastrointestinal and urinary tract can be ruled out by the nature of the aspirated fluid and by radiologic studies. I have to side with the two previous discussors that the mass is an ovarian neoplasm. The textbooks tell me that there is a particular type of ovarian tumor with very oily, odorless material, namely the dermoid.

DR. HOWIE: In an elderly patient with a right lower quadrant mass filled with fluid smelling of hydrogen sulfide diagnosis of a ruptured appendix seems the most likely one. This woman had Paget's disease of the pelvis and may well have had also Paget's disease of the skull. Patients in this age group are often very insensitive to the distress of perforation of the appendix, especially since rupture may occur asymptotically.

Nature Of Aspirated Material

DR. ZIPOLI: To me, the most fascinating information in the protocol is the description of the aspirated material as "thick, brownish-yellow, mucoid, viscid and foul smelling." The first thing I thought of was a dermoid which became secondarily infected. Next, I thought of a large sebaceous abscess. Some sebaceous cysts may attain large size though not quite the size of the mass described. If this mass did not arise from the viscera it may have originated from the peritoneum, the peritoneal fat, the musculature or the skin of the abdominal wall. It seems unlikely that a congenital anomaly or a congenital rem-

nant would give symptoms this late in life. Thus, we can rule out a supernumerary breast located in the region of the inguinal ligament. A rhabdomyoma of the abdominal wall would cause more anterior extension. I want to mention a tuberculous psoas abscess which drained into the inguinal area. I have to conclude that whatever mass this woman had was secondarily infected. The intestinal contents, too, can contain hydrogen sulfide: It is a common experience that in patients who have eaten eggs the odor of hydrogen sulfide is discernable at 1 part to 50,000. Thus, there seems likelihood of a perirectal abscess, cold indeed, dissecting anteriorly toward the inguinal lymph nodes.

DR. STEARNS: I am intrigued with the problem of extension of the abdominal mass below Poupart's ligament. A mass in this area would very likely represent matted, secondarily infected lymph nodes. In view of the reversed albumin-globulin ratio and inguinal adenopathy one must mention lymphogranuloma venereum. This possibility becomes very remote since there was no rectal stricture and because of the patient's age. Hydronephrosis in an ectopic or bifid kidney should be ruled out. The pyelogram could well have been normal and she could have had a huge hydronephrotic mass in a non-functioning organ. Far more likely, a lower quadrant mass in an aged woman is some sort of an appendiceal abscess and "appendicitis" at this age may be carcinomatous. I suggest that the patient had a carcinoma of the cecum that perforated forming an abscess; further, that the abscess liquefied and created an osmotic gradient resulting in cyst-like formation. I am using analogy with a subdural hematoma where the mass enlarges because of an osmotic gradient.

Hematoma To Be Considered

DR. STAGG: A fine array of diagnoses has been suggested for lesions originating within or outside the abdominal cavity, the abdominal wall and adjacent structures. They are all good possibilities. A few addi-

tional conditions warrant study: Endometriosis can be connected directly or related to the ovary and may in this location become large and cystic. In its development it might conceivably migrate along the femoral area. We should consider actinomycosis since 15 per cent of it arises in the right lower quadrant of the abdomen. This, too, can migrate and form a mass below the inguinal ligament. In connection with the trauma experienced some six weeks before admission the mass could be a hematoma. Such could develop a fluid content and enlarge. Retroperitoneal hematoma can be rather large, even in the first stage, and by hygroscopically collecting more fluid within it and by becoming secondarily infected it could well present as a fluctuant tumor with odorous content. This might be essentially asymptomatic. On this last diagnosis I want to place my name.

Misleading Indications

DR. POLLAK: I have made a few notes during the discussion. If I would not have known the answer to the riddle I would have mentioned Meckel's diverticulum or diverticulitis followed by localized and locular peritonitis. I also would have mentioned actinomycosis which after coecal or appendiceal rupture results in plastic peritonitis with many pockets. The patient had been hospitalized in 1951, at a time when hemoglobin was still expressed as per cent instead of in grams and hematocrit readings had not yet replaced erythrocyte counts. I want to criticize another deficiency in the laboratory data namely the albumin-globulin ratio. This ratio to me is a "dead duck" and it misled some of the discussors. Relative hypoalbuminemia and hyperglobulinemia may accompany many chronic and some acute diseases. In 1951 electrophoretic study of serum protein was not within the scope of a routine hospital laboratory.

At operation, thorough exploration revealed a normal liver, gall bladder, pancreas, kidneys and adrenal glands. The genitalia were normal. The entire diges-

Clinico-Pathologic Conference

tive tract was normal but for the appendix. The cecum was freely movable. It was retracted medially and exposed. The appendix was lying on the floor of the iliac fossa and was, for the major part, in retroperitoneal position. The appendix was about one and one-half to twice its normal size. It was moderately indurated. Its tip lay on top of a fluctuant retroperitoneal mass which was apparently contiguous with the mass which had extended onto the anterior abdominal wall. At first, it was thought that this represented an old ruptured appendix or a mucocele which had extended retroperitoneally. The appendix was removed in a retrograde fashion. On freeing the tip there was a perforation on the posterior surface communicating with the large cystic mass. Mucinous, foul-smelling fluid oozed from the defect. About 3 quarts of clear, yellow, mucinous material and a small amount of yellow pus was expressed from the incised mass. Microscopically, a primary appendiceal adenocarcinoma extended through the perforation onto the serosa.

The discussion was stimulating. The analysis (Dr. Elliott) made of the protocol was very thorough. Is it surprising that the pediatrician (Dr. Stearns) made the diagnosis in this aged patient? There is much similarity between the behavior of the young and the old. Aging starts at

the cradle; the pediatrician should take his place among gerontologists. It is not surprising that a pathologist (Dr. Howie) mentioned a perforated appendix. Many old, and senile persons in particular, have a very high threshold for pain. Even myocardial rupture is not noticed by some. The surgeon (Dr. Stagg) who discussed the life history of hematoma made a major contribution to our discussion. This was indeed a combination of two processes: *Carcinoma of the appendix ruptured into a hematoma*.

I selected this case because of the coincidence of trauma and neoplasm. Carcinoma was discovered incidentally to laparotomy for a mass which basically was a hematoma resulting from trauma. It is questionable whether the appendix would have perforated spontaneously. One cannot predict the outcome of the large retroperitoneal hematoma had appendiceal perforation into it not occurred. The aspirated material was a mixture of mucus, pus, old blood and feces. No neoplastic cells were found in the debris but many organisms of the intestinal microflora were present. Some of these produced hydrogen sulfide, a common byproduct of bacterial putrefaction. The mass was drained, antibiotics were applied locally and generally and the patient was discharged from the hospital ten days after surgical operation.

PARTICIPANTS

Members of the staff of the 1607th Air Force Base Hospital participating in the Clinico-Pathologic Conference:

Capt. Stuart G. Weisfeldt — assistant chief of obstetrics-gynecology (Marquette)

Capt. Donald P. Elliott — assistant chief of surgery (Jefferson)

Capt. Paul Stagg — chief of surgery (Louisiana State)

Capt. Sheldon E. Stearns — chief of pediatrics (University of Illinois)

Capt. Henry M. Eisenberg — chief of obstetrics-gynecology (New York State University, Syracuse)

Capt. Gerald A. Belkin — chief of medicine (University of Texas, Dallas)

Capt. Thomas E. Zipoli — assistant chief of medicine (Georgetown)

Col. Henry F. Steinbock — hospital commander (University of Illinois)

Capt. John Thomas Danforth (Georgetown)

Capt. Robert C. Altland (Hahnemann)

Capt. Thomas P. Ball, Jr. (Emory)

Capt. Donald A. Cryan (St. Louis University)

Dr. Kokubu (Osaka University, Osaka, Japan)
Otakar J. Pollak, M.D., executive director, Dover Medical Research Center Inc.

Donald L. Howie, M.D., pathologist

STATE MEDICINE IN BRITAIN[†]

How it Came About

• This is an eye-witness story of a young doctor who could take no more and came to the United States to set up practice anew. He is now worried; it could happen here too.

W. MUNRO LESLIE, M.D.

In Britain, the state first became interested in medicine in 1914, when the Prime Minister, Lloyd George, initiated the "panel" system. This was a scheme to provide medical care, etc. to all employed workers with an income of \$1250 per annum or less. Dependents were not included.

Here it should be stated that although the dollar equivalents mentioned are calculated at the current rate of exchange, they do not give a completely accurate picture because lower standards of prices and wages in Britain enable one to live on a much lower income than would be possible in the USA.

The Thin Edge Of The Wedge

It didn't look too bad at first. Each employee's contribution was to be but 28 cents per week to which the employer would add 40 cents, making an annual payment of \$35.36. The doctor would receive \$2.60 per year for each patient on his list (or panel), and \$32.76 went to drugs, sick pay and administration expense. The Chancellor of the Exchequer had the power to raise or lower the payments to doctors so that he could more easily balance his annual budget, and after many downs and ups

the figure, at the beginning of the Second World War, had sunk to \$1.25 per patient per year. The "panel" patient was entitled to, and had paid for, medical attention at any time from the doctor of his choice, either in the office or at his home when he so requested. The doctor was under contract to provide such attention, prescriptions (in triplicate), and various certificates of incapacity, and to maintain for inspection a complete record of each house call, office visit, with clinical notes, diagnosis and treatment. Forms were available, but no secretarial help was provided.

Most practitioners accepted the scheme as part of their contribution towards charity. The amount of extra work can be imagined. As might be expected, too, the "panel" group included the great number of malcontents with which any doctor is familiar. It was difficult to persuade some that the doctor did not receive all of their \$35.00 yearly contributions. Some adopted a belligerent attitude that since they had paid richly for their medical care they should have it at once. Nevertheless, in my practice these panel patients received exactly the same care as did my private patients (the medical profession is indeed a most extraordinary one), and both groups attended the same office at the same times.

My own practice was in a residential area of an income group above average, and while I had some delightful panel pa-

Dr. Leslie, a native Scot—University of Edinburgh, '31; entered general practice at Harrow; became associate in medicine Harrow Hospital and served three years with the Royal Army Medical Corps in Africa. Dr. Leslie is a citizen of this country established in general practice and is associate in medicine, Chestnut Hill Hospital.

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tients, I still remember a request for a house call at 3 a.m. to remove a piece of grit from a patient's eyelid, and going out one stormy night to investigate a complaint of "severe headache," to find a patient with an abscessed tooth, who had to have medication to enable him to sleep. Again I remember a request to call round after the evening office hours because "I'm sorry I was out at the store when you called this afternoon." The majority of "nuisance" calls came from panel patients, and all in all the panel medical service was not one to inspire mutual confidence between doctor and patient. The remuneration was ridiculous, and I believe that the scheme, altruistic in its inception, contributed greatly toward the cheapening of medicine in the public esteem.

However it certainly did provide the machinery to care for the indigent sick. (It also provided the same benefits for the daughter of the local steel magnate while she worked in her father's office, until such time as she decided to get married and leave.)

Hammering In The Wedge

During the war the Conservative government then in power, suddenly, without consultation with the profession, raised the income limit for panel patients to almost double, but decided that medical remuneration could not be raised. At this time half the nation's doctors were in the armed forces, and the rest were too preoccupied to protest. And so things continued until the Labour party assumed power after the end of the war.

The new Minister of Health was not a doctor. The late Aneurin Bevan had been a miner before he took up politics. A doctrinaire socialist, he had set his heart on nationalising the whole of medicine, as his colleagues were attempting to do with the railways and the coal and transport industries. Propaganda was set in motion. It was announced that medicine was becoming too costly for the average citizen (or should I say, voter). If it were organised by

state it would be free. Newspapers, radio, television carried information about the proposed free medical service, free hospitalisation, new medical clinics to be built in every area with modern equipment for doctors to work in, free. Even newspapers of the stature of *The Times* referred to "free" medical care for all. The propaganda was successful.

Negotiations were opened with the British Medical Association to arrange for the government to take over the whole of the nation's medical services. The "terms of service" were propounded. The country was to be divided into areas, district, etc., and the bureaus necessary for their organisation were to be provided. No doctor would be directed anywhere, but of course no doctor would be allowed to practice in any area where the bureau decided doctors were not required. Doctors would have a free choice to settle in any of the areas decided upon by the government. Once settled, they would not be allowed to move without the permission of the committees controlling the area in question. As the doctor's office and also his house formed part of his "goodwill," it now became illegal for him to sell even his home without previous permission from the local government committee.

In order to clarify this and subsequent decrees it will be necessary to digress briefly to explain that the population of Britain has been almost stationary for generations and that most Britons, having chosen a family doctor, would stick loyally with him during their lifetime, and that of their children and—he with them. This made it difficult for a young doctor to open a new office successfully. Therefore all young doctors became associated with senior men, and finally bought a share in the intangible "goodwill" of the practice. The young man bought his practice, and sold it when he retired, borrowing the money when necessary, as he did for his house. The price varied with the desirability of the location, so doctors were therefore fairly evenly divided among the popu-

lace. Having bought a practice, the doctor was constrained to give of his best in order to retain it, a fact greatly to the advantage of the patient.

During the negotiations with the minister, the population was worked up into a state of indignation by the popular press, about being "bought and sold," and as the doctor's office and house form part of his goodwill, it is now illegal in Britain for a doctor to sell his home without previous permission from a local government committee!

Further, any doctor who should displease the Minister of Health may be summarily dismissed from the service. His sole appeal is to the Minister of Health, appeal to the courts of law being prohibited by the "terms of service." (Anyone who thinks that I am making this up can confirm it very easily by consulting the *British Medical Journal* of January 1948.)

In 1948 the British Medical Association held a plebiscite of its members, and by a majority of nine to one refused to take part in this scheme. The Minister after further consultations issued a paper making some minor concessions, none of which referred to the points just mentioned, but toward the end of his paper there appeared somewhat nonchalantly the following paragraph:

"Doctors taking part in the new scheme will not be able to sell their practices but those whose names are on a medical list by the 5th July, 1948, will be entitled to compensation." The paper was dated April, 1948.

Most practitioners, who had invested a considerable sum in their practices, got the message, and here I should like to pay tribute to those of them who voted against the scheme in the second plebiscite, in spite of this statement.

The BMA hurriedly arranged another plebiscite, and this time two out of three doctors voted against the scheme. The

BMA, however, advised the minister that the profession would take part in it, stating:

"Although there is an overall majority against accepting the service, the majority does not include approximately 13,000 general practitioners, the majority the BMA required if it was to continue to advise the profession not to enter the service."—*BMJ*. May 8th, 1948.

The Wedge Driven Home

It was then that I decided to leave the country, and to begin my medical practice anew in the United States. Four of my immediate colleagues did so too.

The rest of the story is probably better known. Remuneration was (later) arranged at \$3.00 per patient per annum, with a maximum allowance of 4,000 patients. It then turned out that the average doctor in the country was 2,000, so doctors who had 4,000 on their lists were ordered to drop 500 of them. Some doctors who practiced in prosperous farming country had difficulty, in their scattered terrain, in getting enough to keep their children at school, but others who lived near high rise apartments, filled their lists immediately without leaving the block. No clinics appeared, and it seemed that the doctor would have to provide his own office "free." No new hospitals have been built at all. The cost of prescriptions rose ten-fold—literally—and the government had to make a flat charge of 20 cents for each item on a prescription, and now this charge has been supplemented by a rise in the subscription rate all round.

The cost of living has risen since 1948, but the scheme "simply could not afford" to raise the remuneration of the practicing physician, although the original agreement contained a clause to that effect.

It was little publicised, but the BMA after fruitless negotiations, finally went to a conference armed with written resignations from the scheme of the majority of British doctors and thus secured the promise of

a hearing by an investigating committee. After two years of investigating, this committee voted the doctors an increase in remuneration based upon the cost of living (which was the original agreement). They omitted, however, to make it retroactive!

Who Pays For All These "Free" Services?

With all this, the individual's contributions pay for approximately one quarter of the cost of the medical scheme. The remaining three quarters have to come from the general inland revenue. Income tax in Britain begins at 40% in the lowest bracket (and this in addition to each person's annual contribution or subscription to the Health Service which is now \$52.00).

During a brief return to Britain in 1959 I revisited some of my previous patients, and most of them appeared contented with their lot. One good lady had developed multiple sclerosis, and was comfortably established in a nursing home for the rest

of her life. She had regular medical attention, and "no worries." One business man had developed a hematemesis from tuberculosis, was attended by his doctor regularly, and by a consultant who called several times at his home. The disease is now arrested, and the man is back in business. "All this," he said "I got for free."

I replied, "Harry, apart from your income tax you have paid \$2.00 a week for the past eleven years, and you will continue to pay this as long as you are able to work. You never paid me anything like \$1100, when I used to look after you." He smiled. "You never miss it when it's taken out of your pay packet." he replied. "I like it this way." As I left, he pressed a pinch bottle of Haig and Haig into my hand. "Maybe I owe you this," he said . . .

Can anything be learned from this somewhat sketchy history of the Health Scheme in Britain? I think something can, and should.

New Members

George L. Henderson, M.D., New York Medical College, '55, is a New Englander. For two years prior to coming to Wilmington, he was stationed at Camp Dix, serving as chief anesthetist. Dr. Henderson likes to play golf and romp with his three children—two boys and a girl. Specialty: Anesthesiology. Office: 1314 Lakewood Drive, Northwood 3.



Charles K. Bush, Jr., M.D., a Kentuckian, is a graduate of Louisville Medical School '29. Formerly chief inspector of the American Psychiatric Association's Central Inspection Board, Dr. Bush came to Wilmington to take the post of assistant superintendent of Delaware's mental health program. Dr. Bush has four children; three away at school and a young son at home. He is a philatelist and collects match covers as a hobby. Office: Delaware State Hospital, Farnhurst.





President's Page

HEALTH FOR OLDER PEOPLE

In order to maintain a functioning efficiency of the older body and mind, the physician searches for the cause, and in turn, the prevention of disease prone to afflict our senior citizens. Many disorders once thought to be part of the aging process (atherosclerosis is an example) are now considered to be metabolic diseases susceptible to prevention or amelioration. Much knowledge of nutrition remains to be applied to the prevention of nutritional disorders in the older person.

Some of the biological aspects of aging are loss of elasticity in connective tissue, loss of cellular elements in the nervous system, impairing pulmonary function, decreased oxygen utilization, altered hormone production and reduced muscular strength. In treating the "whole patient," the physician must also deal with stubborn sociological and psychological factors which affect health. Care for the patient is fundamental to care of the patient.

Certain aids to health maintenance are frequently ignored or postponed through procrastination by our people. For example, clinical dental research has shown that loss of teeth after age 40 years is commonly due to periodontal disease, rather than to disease of the teeth themselves. Through prompt attention to and continuing control of disease of the supporting tissues, the teeth remain firmly in place for a longer time.

Physical insults to the skin, such as excessive exposure to sunlight and other forms of radiant energy, speed up degenerative changes leading to atrophy, pruritis and dermal cancer. "Sun worship" can be overdone.

Early treatment of glaucoma and surgical removal of cataracts are steps in the preservation of vision. More older people suffer from defective hearing than from heart disease, paralysis, joint diseases, tuberculosis or cancer. If life is long enough, everyone develops a progressive loss of hearing, designated as presbyacusia.

Looking at the other end of the body, it is reported that podiatrists find disorders of the feet in the majority of older patients.

In these and in many other areas, there remains a need for study if we are to serve our older patients properly. Currently there are about 16 million people in the United States over 65 years of age. Projections for 1980 indicate that the number will reach about 24 million.

Editorials

THE DOVER MEDICAL RESEARCH CENTER

The Dover Medical Research Center was incorporated under the laws of Delaware on January 27, 1959. It is a non-profit, tax exempt organization formed for the purpose of furthering medical research. While the research at present is basic in nature, the possibility of expansion to include clinical staff and facilities has been considered.

The board of directors includes some of the most prominent citizens of the state. The scientific staff is headed by Dr. O. J. Pollak. Specialists in various fields of medical research (chemistry, atherosclerosis, and tissue cultures) have joined the staff; these scientists have come from Argentina, Japan, and National Cancer Institute.

Research grants for research in cardiovascular disease have been received from the National Heart Institute, the Delaware Heart Association, the Eli Lilly Company, and the Research Committee of the Tobacco Industry.

The twelve papers published to date by this group may be divided into the following four fields: nutrition and atherosclerosis, pathologic-anatomic studies, biochemical studies, and cytologic studies.

Our best wishes to this group.

ABOUT THAT LICENSE INCREASE

A news item in a Wilmington paper notes that professional people in Delaware are due to have their state license fees more than doubled. The proposed legislation is described as an attempt to modernize Delaware's outmoded system of fees.

There are people who consider any system to be outmoded if they can visualize another that yields more money. The stated reason for this raise is to "plow most of the money back to the state regulatory boards for tighter enforcement of the law."

The question that interests us is why the professions should support the state regulatory boards. As we understand it, the people, acting through the legislature, established these boards to protect themselves against unqualified practitioners. Certainly this power resides with the people, and equally certainly they benefit from its exercise. To ask small groups of professionals to pay their expenses makes no more sense than to ask physicians to provide a budget for the Board of Health or lawyers to pay for the operation of the courts.

But if the professionals are to carry this much of the people's burden, and if we concede, as we do, that we would rather support the boards than see them vanish, we do not understand why our license fees should be several times the cost of regulation. The state's graduated income tax, particularly with its \$600 limitation on federal income tax, is an entirely adequate mechanism for making the professional, as a citizen, bear his share of the cost of government.

WHAT'S YOUR HOBBY?

More times than we can remember we have asked the members to let us know about their hobbies. We know that we have artists, musicians, cabinet makers, and others in our ranks but we'd like to know the entire picture so that we could pass it on.

The recent Doctor's Hobbies Exhibition of the British Medical Association brought forth almost 1500 exhibitors—from a real licensed aeroplane made by one member and a racing car made by another to numerous displays of collections, arts, and crafts.

It was commented that it might be good for the profession if each member had to give evidence each year of having some hobby.

Think it over—it's not too late.

In Brief

Metamorphosis Of A Vaccine

Out of 34,000 antibiotic cultures from soil samples screened in one year, by Parke Davis research scientists, only 600 contained antibiotics sufficiently different and potent to justify further work; further study reduced this number to 200 for laboratory tests and 30 of these were experimentally manufactured. Only six antibiotic products reached final clinical investigation and these will take two to four years, if successful, to put on the market.

Physician-Patient Ratio

Jefferson Medical College — proud of having educated more physicians than any other medical school in the nation — is launching a comprehensive \$40,000,000 development program. Top priority will go to the Basic Science Building because of the need to expand research in pre-clinical departments. A government survey has warned medical colleges that they must be graduating 50% more physicians by 1975 in order to maintain the present physician-patient ratio.

What Price Miracle

The modern miracle drugs may be linked with the recent rise of atherosclerosis among young adults. Otto Saphir, M.D. of Michael Reese Medical Center, Chicago, told a meeting of the Federation of American Societies for Experimental Biology that in an experiment with 50 hypersensitive rabbits injected repeatedly with sulphathiazole, the healed arteries could be described as atherosclerotic after the animals had been taken off the drugs.

On Your Guard

The Delaware National Guard is looking for young doctors — no military experience necessary. Major General Joseph J. Scannell, Delaware's Adjutant, said there are 14 vacancies. Doctors who qualify will be appointed as reserve first lieutenants and will not be called to active duty unless their entire unit is called out. The Air Force has also announced that it has called on Selective Service to draft 250 young doctors.

In The News

A \$10,000 research grant was made by the Easter Seal Research Foundation of the National Society for Crippled Children and Adults, Inc., to Arthur J. Heather, M.D., to develop a special pressure relief mattress to prevent bed-sores on paralysed patients. An additional \$10,000 has been allocated by the Society to be awarded if needed. Dr. Heather had proposed a specially constructed adjustable mattress to vary the pressure exerted on patients' tissues.

Michael Elyan, M.D., of Dublin, Ireland, will head a new research division at the Hospital for the Mentally Retarded at Stockley. Dr. Elyan, a Fellow of the Royal Irish Academy of Medicine, is deeply interested in the multiply handicapped and retarded child.

Hospital Expansions

A new four-story hospital wing will be the second major phase of the Beebe Hospital expansion program. Plans for the new addition provide for a modern maternity department consisting of several private rooms, labor and delivery suite, nursery and formula room; there will also be needed space for an enlarged emergency department, laboratories, cafeteria, dining hall and service facilities.

Kent General Hospital, Dover, is starting a building program which will include a three-floor wing on the western side of the plant for laboratories; a new physiotherapy department; new nurseries; more bedrooms; a one floor addition on the north side for a larger kitchen and an expanded x-ray department and air-conditioning throughout. Funds appropriated through the Hill-Burton Act will help finance the program for both hospitals.

Reminder

Is the Outing on June 18th at the Lewes farm of Otis Smith on your calendar? Remember, the fun starts at 2:00 P.M. and lasts till dusk. This is a highlight of the 75th Annual Convention of the Pharmaceutical Society. They will be hosts for Delaware physicians.

Personal Glimpses

. . . Lemuel C. McGee, M.D., was guest speaker for the kick-off luncheon held by the American Cancer Society in Georgetown . . . Robert W. Frelick, M.D., spoke to the Kent County Unit of the American Cancer Society on *Cancer Research and the Importance of Educating the Public* . . . Ulo Ware, M.D., was inducted by James Beebe, Jr., M.D., as a member of the Lewes Rotary Club . . . Otakar J. Pollak, M.D., made the introductory remarks at the First Cardio-vascular Tissue Culture Conference sponsored by the Dover Medical Research Center . . . Drs. William D. Johnson, Claymont; James B. McClements, Dover; Albert Dworkin and John M. Levinson, Wilmington, were inducted into the American College of Obstetricians and Gynecologists at its meeting in Chicago, April 20-28; Richard C. Hayden, M.D. and William T. Gallaher, M.D., both of Wilmington, are chairman and vice-chairman, respectively, of District 3, the Delaware Section, for the College . . . Drs. Floyd I. Hudson, Charles K. Bush and George S. Campana were forum speakers on the subject "*Know Your Government*" sponsored by the Committee of 39; Dr. Hudson discussed the operations of the State Board of Health; Dr. Bush spoke on mental health and Dr. Campana on communicable diseases . . . William O. LaMotte, Jr., M.D., addressed the Wilmington Chapter of the National Federation of Jewish Women in April and took part in a panel: subject, "*Financing Medical Care for the Aged*" . . . James Aikens, M.D., was in charge of an exhibit on Anesthesiology which was displayed in the window of Strawbridge & Clothier, Wilmington, the week of May 8. This was sponsored by the State Society as a part of National Hospital Week . . . Drs. M. B. Pennington, R. W. Comegys, J. J. Davolos, M. E. Conrad, and G. W. Martin attended the meeting of the American Academy of General Practice in Miami Beach last month . . . Hal W. Geyer, M.D. has accepted the post of Senior Psychiatrist at the Delaware State Hospital . . .

Auxiliary Affairs

HEALTH CAREERS

Predicting the future is a hazard that even the bravest approach with caution. Nevertheless, such was the nature of the assignment given to the National League for Nursing—to forecast changing needs in nursing service and nursing education based upon examination of social and health trends in the foreseeable future.

Nursing schools are already short of trained teachers. In addition to teachers for basic nursing students, teachers are needed for practical nursing schools—to teach teachers, administrators, and supervisors of nursing service—for inservice education in nursing.

"Leadership in Community Health," was a theme of the Woman's Auxiliary to the American Medical Association several years ago, and is, in our estimation, a permanent theme because it offers a natural role that we, as wives of physicians are equipped to fulfill. In addition to the obligation attendant upon leadership there is the rich reward of real accomplishment and the deep satisfaction of being active in one's own community. As Auxiliary members, we have our active committees for the American Medical Education Foundation, Mental Health, Stockley Hospital, Florence Crittenton Home, etc., and our good medical teamwork through paramedical recruitment.

Our committee on Health Careers Recruitment has three functions.

1. To work in co-operation with interested and allied professions in the recruitment of student nurses and paramedical technicians.
2. To safeguard the standards of the professions by interpretation, education and guidance in the recruitment program.
3. To encourage service organizations to establish student grants-in-aid scholarships.

We feel confident that we have carried out our three main functions. At the present time, we have students in all of the nursing schools in the state and in two

schools of medical technology. We have presented each high school in the state with all available information on our recruitment program and the programs of other service organizations for whom we offer our services in screening and selecting recipients of their awards. Further information has been presented to each high school guidance counselor in an article especially written at the request of the Department of Education in Dover, for publication in the Guidance Counselor Guide Book. Similar information is made available to all prospective nursing and technology students in catalogues of all the Nurses' Training Schools. This past year we helped establish a grant-in-aid program for the Lions Club of Milford. This is in addition to the long standing assistance to the Wilmington Rotary Club and the Zeta Chapter of the Beta Sigma Phi Sorority. We answered thirty-nine applicants, screened and selected candidates for all available awards and offered information on other available scholarships, grants and loans to those applicants for whom we could not provide a grant.

In the field of nursing, it would seem that with 70,000 nurses entering nurses' training each year, in three years we would be graduating 210,000. Unfortunately this is not so for approximately 35% of all classes drop out. To lower this all too high mortality rate we must forge ahead with another endeavour in our recruitment program, "*The Future Nurse Club*." In this way, young people may learn early whether or not their interest in nursing is deeply enough rooted before they take a place in a school of nursing which cannot be filled at a later date. We are especially proud of our members in Kent and Sussex Counties who are responsible for sponsoring and guiding many of these future nurse clubs.

Kathleen E. Aikens, *Chairman,
Health Careers, Recruitment Committee*

Winslow Homer "THE HERRING NET" Art Institute of Chicago.



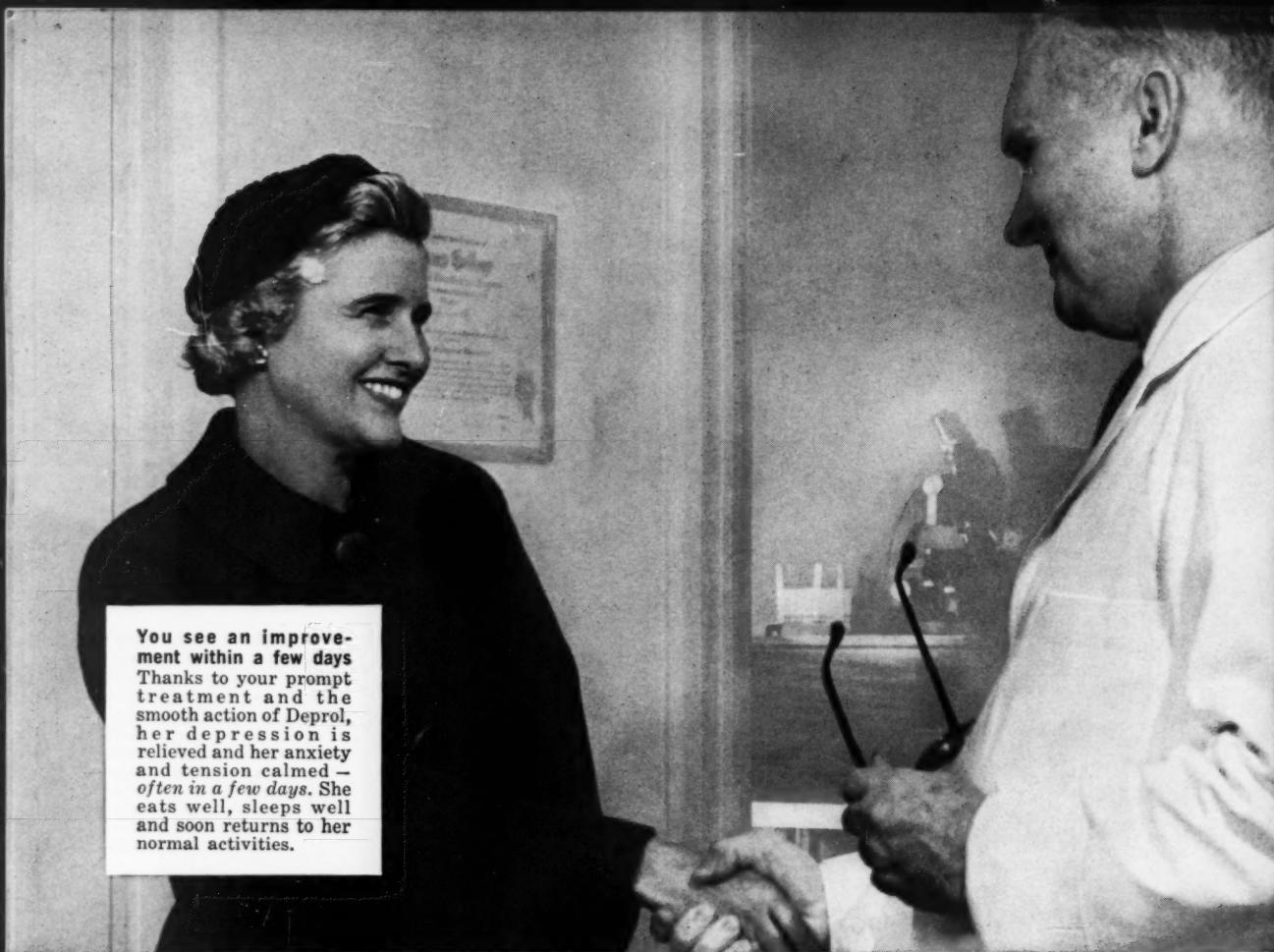
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Strain is a necessary component of man's efforts to move his external environment, but all too often brings on extreme pain and trauma when hard stools are moved after repair of rectal disorders. Metamucil adds soft, bland bulk to the bowel contents to stimulate normal peristalsis and also hold water within stools to keep them soft and easy to pass. Thus Metamucil, with an adequate water intake, is of great help in minimizing painful trauma to postsurgical rectal tissue. Metamucil promotes regularity through "smoothage" in all types of constipation.

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You see an improvement within a few days. Thanks to your prompt treatment and the smooth action of Deprol, her depression is relieved and her anxiety and tension calmed—often in a few days. She eats well, sleeps well and soon returns to her normal activities.

Lifts depression...as it calms anxiety!

Smooth, balanced action lifts depression as it calms anxiety...rapidly and safely

Balances the mood—no “seesaw” effect of amphetamine-barbiturates and energizers. While amphetamines and energizers may stimulate the patient—they often aggravate anxiety and tension.

And although amphetamine-barbiturate combinations may counteract excessive stimulation—they often deepen depression.

In contrast to such “seesaw” effects, Deprol's smooth, balanced action lifts depression as it calms anxiety—both at the same time.

Acts swiftly—the patient often feels better, sleeps better, within a few days.

Unlike the delayed action of most other antidepressant drugs, which may take two to six weeks to bring results, Deprol relieves the patient quickly—often within a few days. Thus, the expense to the patient of long-term drug therapy can be avoided.

Acts safely—no danger of liver damage. Deprol does not produce liver damage, hypotension, psychotic reactions or changes in sexual function—frequently reported with other anti-depressant drugs.

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: 1 mg. 2-diethylaminoethyl benzoate hydrochloride (benactyzine HCl) and 400 mg. meprobamate. **Supplied:** Bottles of 50 light-pink, scored tablets. Write for literature and samples.

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Percodan tablets effectively relieve pain through a range of



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through major traumatic areas into further regions of severe pain



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profound relief
prolonged relief

ACTS FASTER—usually within 5-15 minutes. **LASTS LONGER**—usually 6 hours or more. **MORE THOROUGH RELIEF**—permits uninterrupted sleep through the night. **RARELY CONSTIPATES**—excellent for chronic or bedridden patients.

AVERAGE ADULT DOSE: 1 tablet every 6 hours. May be habit forming. Federal law permits oral prescription.

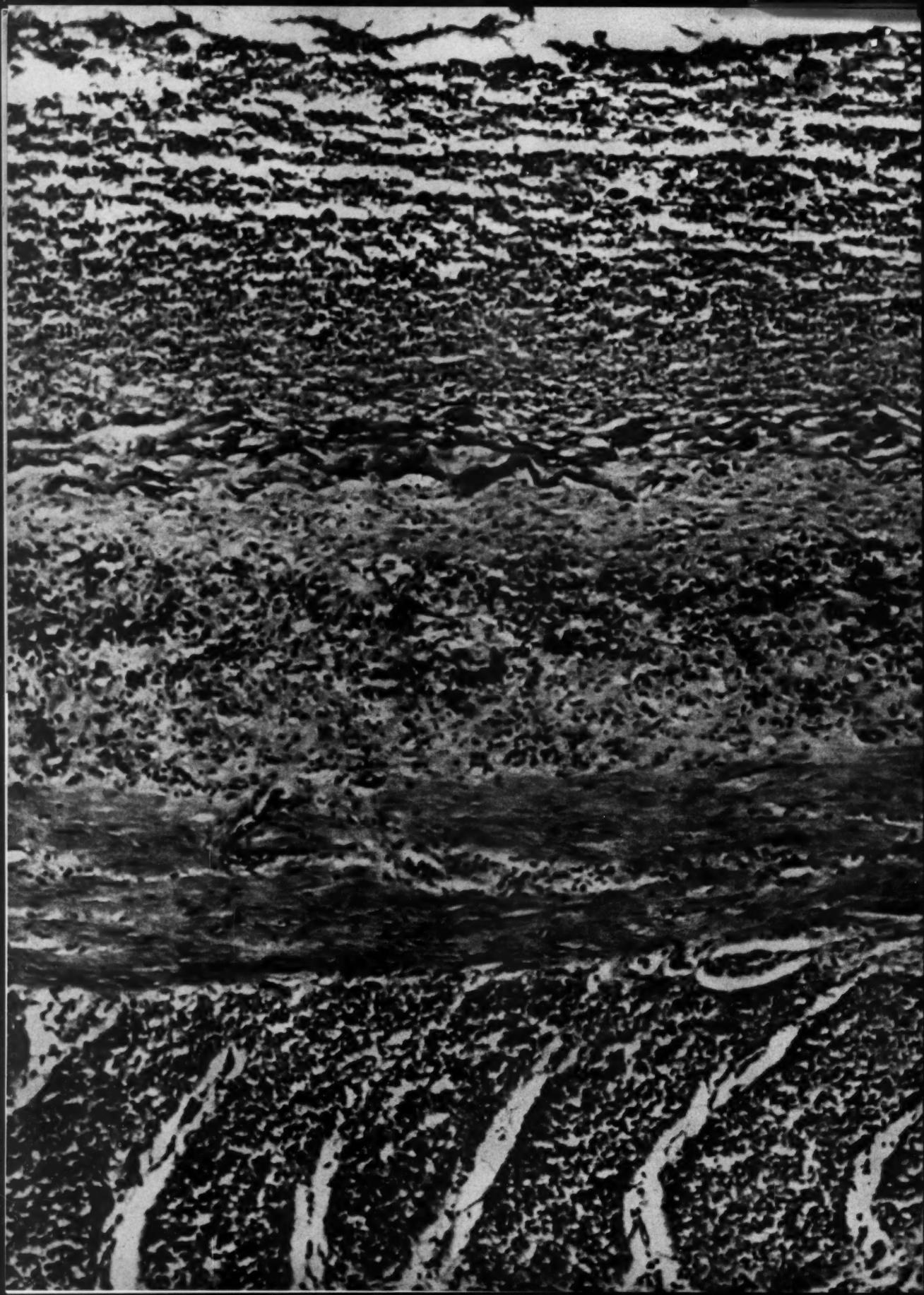
Each PERCODAN® Tablet contains 4.50 mg. dihydrohydroxycodeinone hydrochloride, 0.38 mg. dihydrohydroxycodeinone terephthalate, 0.38 mg. homatropine terephthalate, 224 mg. acetylsalicylic acid, 160 mg. acetophenetidin, and 32 mg. caffeine.

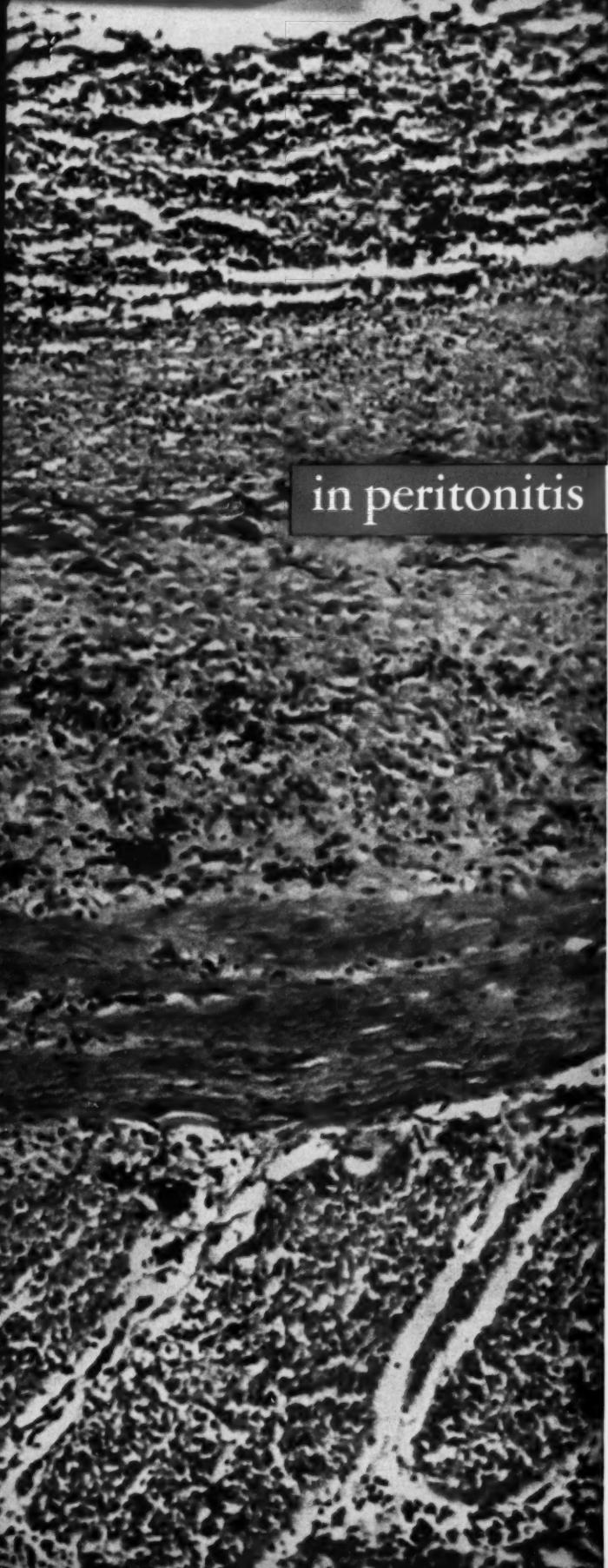
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Endo

LITERATURE AVAILABLE ON REQUEST
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*U.S. Patent Nos. 2,628,185 and 2,907,768





in peritonitis

Therapeutic confidence

Panalba is effective against more than 30 commonly encountered pathogens including ubiquitous staphylococci. Right from the start, prescribing it gives you a high degree of assurance of obtaining the desired anti-infective action in this as in a wide variety of bacterial diseases.

Supplied: Capsules, each containing Panmycin* Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,* as novobiocin sodium, in bottles of 16 and 100.

Adult dosage: 2 capsules four times a day.

Side effects: Panmycin Phosphate has a very low order of toxicity comparable to that of the other tetracyclines and is well tolerated clinically. Side reactions to therapeutic use in patients are infrequent and consist principally of mild nausea and abdominal cramps.

Albamycin also has a relatively low order of toxicity. In a certain few patients, a yellow pigment has been found in the plasma. This pigment, apparently a metabolic by-product of the drug, is not necessarily associated with abnormal liver function tests.

Urticaria and maculopapular dermatitis, a few cases of leukopenia, and agranulocytosis have been reported in patients treated with Albamycin. All of these side effects rapidly disappeared upon discontinuance of the drug.

Caution: Since the use of any antibiotic may result in overgrowth of nonsusceptible organisms, constant observation of the patient is essential. If new infections appear during therapy, appropriate measures should be taken.

As with any serious infection, therapy of peritonitis with Panalba or other antibacterial agents is adjunctive to surgical procedures and supportive therapy.

Inflammatory
process
of the
peritoneum

*Trademark, Reg. U. S. Pat. Off.

The Upjohn Company
Kalamazoo, Michigan

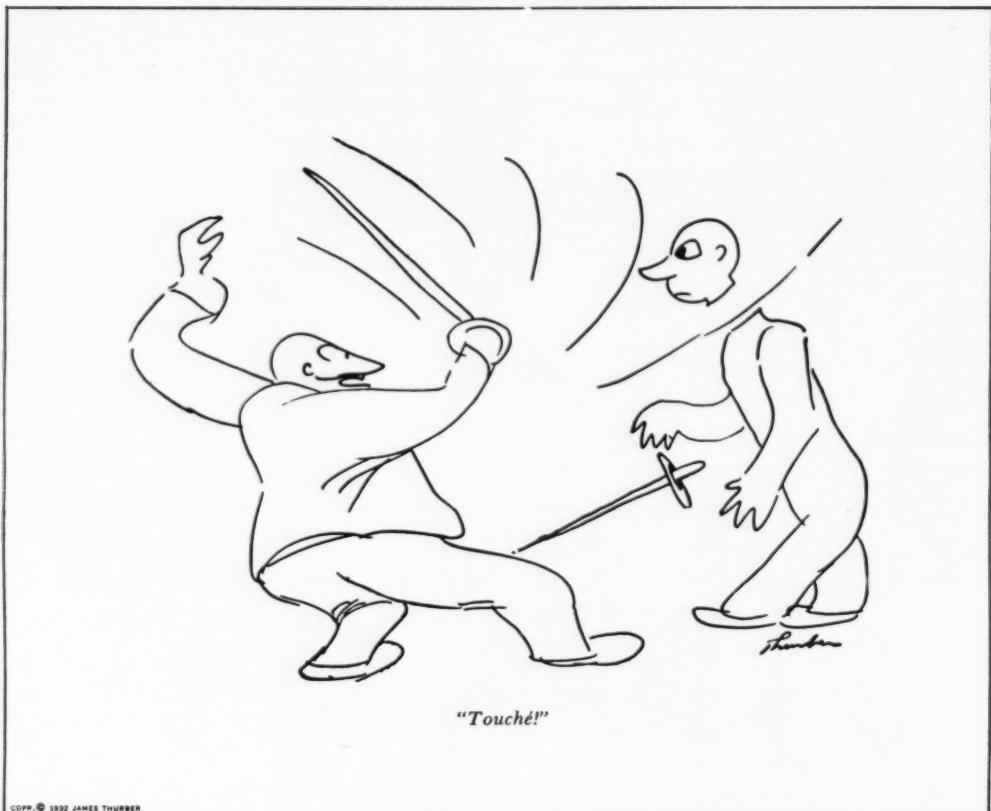
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antibiotic of *first* resort





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For a better way to treat headache,
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How Trancoprin relieves pain: Because most pain is accompanied by muscle spasm and tension, good medical practice suggests use of an analgesic that will relax skeletal muscles as well as dim pain perception. Such an analgesic is Trancoprin — a combination of aspirin and Trancopal®, a proved, safe, skeletal muscle relaxant and tranquilizer. Trancoprin can be prescribed for any pain, except pain of such severity that a narcotic is needed.

Dosage: Adults, 2 tablets three or four times daily; children (5 to 12 years), 1 tablet three or four times daily. Each tablet contains 300 mg. of aspirin and 50 mg. of Trancopal (brand of chlormezanone). Bottles of 100 tablets.

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mutually potentiating nonsteroid antirheumatics

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"superior to aspirin"² and with a "higher 'therapeutic index'"¹

When sodium should be avoided—

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When conservative steroid therapy is indicated—

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Pabalate with Hydrocortisone

1. Barden, F. W., et al.: *J. Maine M. A.* 46:99, 1955.
 2. Ford, R. A., and Blanchard, K.: *Journal-Lancet* 78:185, 1958.

*In each yellow enteric-coated
PABALATE tablet:*

Sodium salicylate (5 gr.)	0.3 Gm.
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Ascorbic acid	50.0 mg.

*In each pink enteric-coated
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Same formula as PABALATE, with sodium salts replaced by potassium salts.

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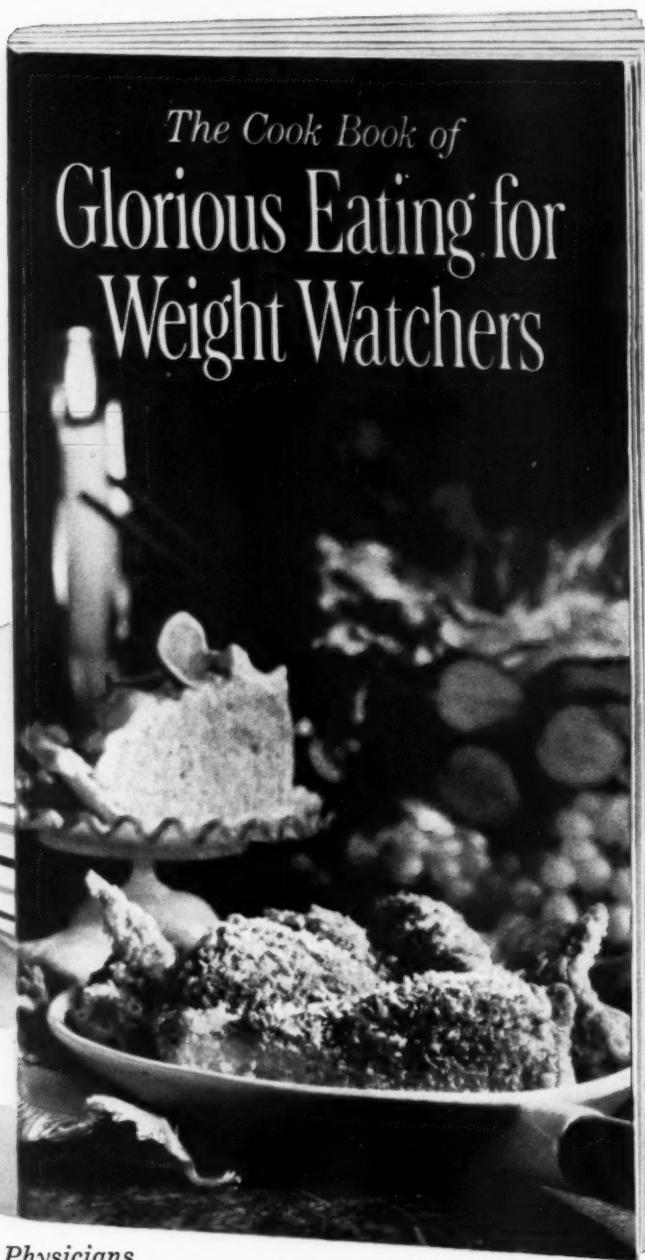
Same formula as PABALATE.
SODIUM FREE, plus hydrocortisone (alcohol) . . . 2.5 mg.

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Menus fulfill the recommended dietary allowances of the Food & Nutrition Board of the National Research Council.

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Recipes and Menus with Satiety and Appetite Appeal in Mind

The Cook Book of Glorious Eating for Weight Watchers fills the long-felt need for a weight control plan that is workable for everybody in the family. Realistic regimens are built around good, natural, readily-available foods enhanced by delicious methods of preparation. In place of "fad diets" or tasteless formulas, it provides for truly appetizing meals. It teaches and encourages the development of the healthful eating habits that can prevent overweight, America's #1 Health Problem. This full-color cook book contains 100 pages—248 delicious recipes each with calorie counts. Complete menus are here at 3 calorie levels—1200, 1800, 2600. Calorie levels are related to best weights by sex, age, size and extent of activity.

Many diets fail because they are crash programs only temporary in effect. Other diets are unbearable because they are monotonous and tasteless.

The Wesson way is not a crash program. It offers calorie controlled menus with appetite appeal, variety and satiety in mind. They fulfill the recommended dietary allowances of the Food & Nutrition Board of the National Research Council.

All menus provide the proper amount of protein, carbohydrates, fat and the other essential nutrients. The principles of good nutrition are included to help the homemaker plan her own properly balanced, calorie controlled menus. With simple subtractions or additions to the same basic menu, each family member can be served delicious satisfying menus according to his individual needs.

Not a reducing manual. It should be explained that "The Cook Book of Glorious Eating for Weight Watchers" is a guide to the *prevention of obesity*. Its publication marks the first time

that a food manufacturer like Wesson has taken so important a step to help combat this serious public health problem.

Copies for physicians. "The Cook Book of Glorious Eating for Weight Watchers" is being offered to the general public. If you would like a copy for yourself, together with forms to enable patients to obtain their own copies, please fill in coupon below.

Note: Please do not confuse this booklet with the Cholesterol Depressant Diet Book, published by Wesson as an aid to physicians and for professional distribution only. The concept of the Cholesterol Depressant Diet Book stems from Wesson's value in cholesterol depressant diets. Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen, poly-unsaturated Wesson is unsurpassed by any readily available brand.



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Please send me my copy of "The Cook Book of Glorious Eating for Weight Watchers", plus two dozen order blanks for distribution to my patients.

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How would you design a tranquilizer specifically for children?



wouldn't you
want it to be:

see how closely these ATARAX
advantages meet your standards:

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“...Atarax appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior....”¹

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“The investigators were impressed with the lack of toxicity and minimal side effects which were observed even after long-term use.”²

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Delicious ATARAX syrup pleases even the balkiest patient.

Nor is that all ATARAX has to offer. In the allergic child, ATARAX offers added antihistaminic action to help control asthma and urticaria.³ In fact, though outstandingly useful in children,¹⁻⁴ ATARAX equally well meets the needs of the elderly, and of the tense working adult (it calms, seldom impairing mental acuity). Why not extend its benefits to *all* your tense and anxious patients?

Dosage: For children: under 6 years, 50 mg. daily; over 6 years, 50-100 mg. daily; in divided doses. For adults: 25 mg. t.i.d. to 100 mg. q.i.d. **Supplied:** Tablets 10 mg. and 25 mg., in bottles of 100 and 500. Tablets 100 mg., in bottles of 100. Syrup, 2 mg. per cc., in pint bottles. Also available: Parenteral Solution. Prescription only.

References: 1. Freedman, A. M.: *Pediat. Clin. North America* 5:573 (Aug.) 1958. 2. Nathan, L. A., and Andelman, M. B.: *Illinois M. J.* 112:171 (Oct.) 1957. 3. Santos, I. M. H., and Unger, L.: *Ann. Allergy* 18:179 (Feb.) 1960. 4. Litchfield, H. R.: *New York J. Med.* 60:518 (Feb. 15) 1960.

ATARAX®
(brand of hydroxyzine) PASSPORT
TO TRANQUILITY



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Science for the World's Well-Being®

VITERRA® Capsules—Tastitabs®
—Therapeutic Capsules for
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**DORNWAL® HAS BEEN CALLED
"THE GENERAL TRANQUILIZER
FOR GENERAL PRACTICE."**

Suppose the physician visiting this patient finds that he has to be hospitalized. Certainly he wants an alert but not excited fellow who can respond to the history and physical on admission. Depending on the condition, of course, the thing to do is to give the patient one or two tablets of Dornwal before he ever leaves his home.

Dornwal will calm the patient but won't make him drowsy or give him feelings of depersonalization. And what's more, while Dornwal most assuredly tranquilizes, it won't interfere with most other medications that your subsequent examination or laboratory studies may indicate.

Since every man in general practice encounters such situations almost daily, it makes good sense to keep some tablets in one's bag, doesn't it? We will be glad to send you a supply.

Dosage: One or two 200 mg. tablets three times a day. Children, age 6 to 16, one or two 100 mg. tablets two times a day.

Supplied: 200 mg. yellow scored tablets, and 100 mg. pink tablets, each in bottles of 100 and 500.

P.S. For the "Genericist", Dornwal is amphenidone.

No absolute contraindications to the use of Dornwal are known. There have been no reports or evidence of habituation, addiction or drug tolerance in animal or clinical studies. Dornwal is relatively free from untoward effects when administered at recommended dosages.

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*Now—From the makers of
Fleischmann's Margarine comes the...*

Only Unsalted Margarine Made from 100% Corn Oil!

- * Wonderful for sodium-restricted diets—10 mgs. of sodium per 100 grams!
- * Contains liquid corn oil and partially hydrogenated corn oil!
- * Delicious flavor like the sweet, high-price spread!
- * Fresh-Frozen—available only in grocers' frozen food cases!



Now, Fleischmann's announces a new unsalted margarine for patients on low-sodium diets, and for those who simply prefer the sweet taste of an unsalted spread. It's new Fleischmann's Sweet (Unsalted) Margarine, made from 100% corn oil. This new margarine has a linoleic acid content higher than any other margarine available at grocery stores . . . and ten times higher than the high-price spread. Thirty percent (30%) of the fat in Fleischmann's is polyunsaturated.

**Smooth, Fresh Flavor Preserved
By Exclusive Fresh-Frozen Process**

This new unsalted margarine has a light, fresh flavor your patients will find delicious. And because it contains no salt or other preservatives, it's Fresh-Frozen for flavor protection. Your patients can be sure it's always fresh and pure.

Although this new margarine is Fresh-Frozen, the quarter in use may be kept in the refrigerator as any other spread. The remaining quarters should be stored in the freezer.

**For Patients
On Sodium-Restricted Diets**

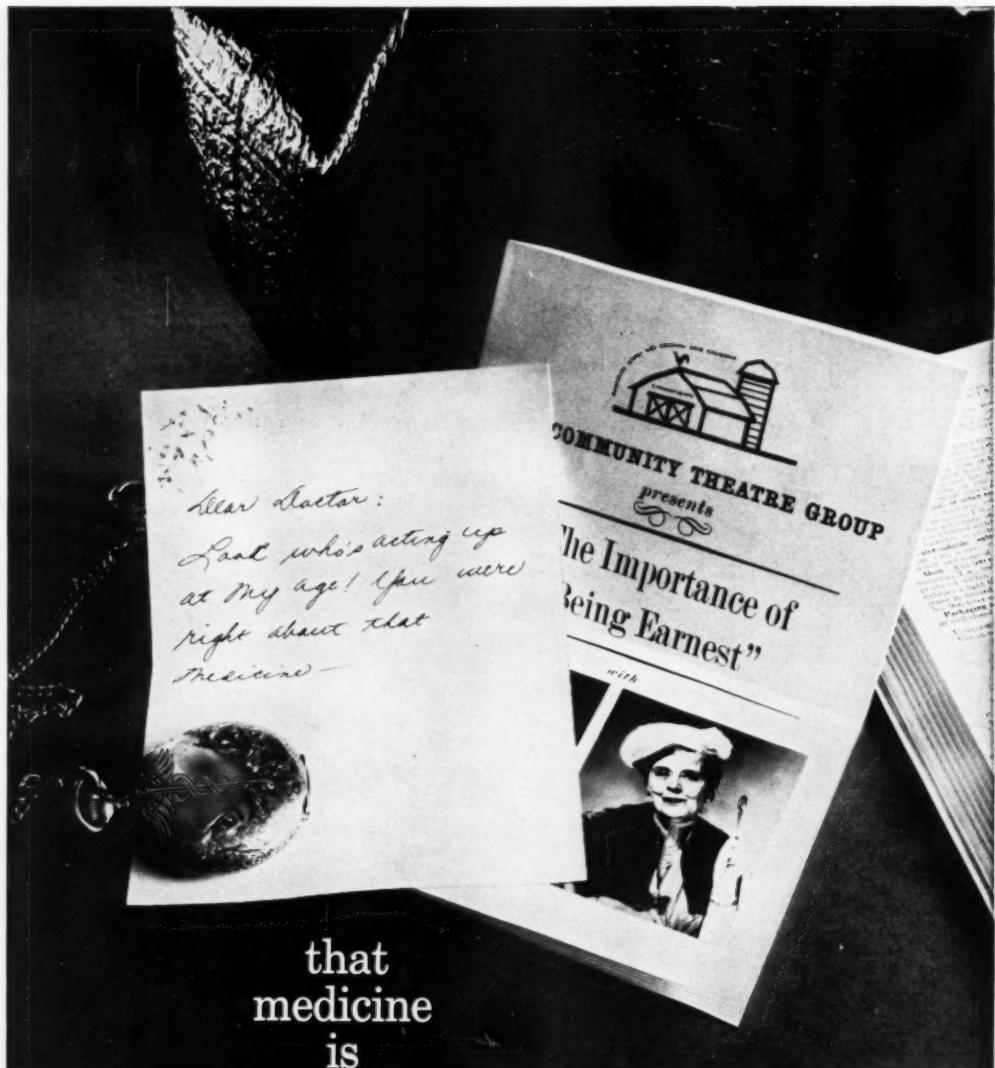
If your patients need sodium restriction, recommend delicious new Fleischmann's Sweet (Unsalted) Margarine. It's ideal as a table spread and for cooking. It comes in a *bright green* foil package and is found in the grocer's frozen food case. Remember Fleischmann's is the first and only unsalted margarine made from 100% corn oil.



By the Makers of Fleischmann's Yeast

Fleischmann's SWEET (UNsalted) MARGARINE

Made from 100% CORN OIL



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is

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one capsule every morning supplements the diet to help achieve proper balance: ♦ nutritionally ♦ metabolically ♦ mentally

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REQUEST COMPLETE INFORMATION ON INDICATIONS, DOSAGE, PRECAUTIONS AND CONTRAINDICATIONS FROM YOUR LEDERLE REPRESENTATIVE OR WRITE TO MEDICAL ADVISORY DEPARTMENT.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

How to use
Trancopal®
 Brand of chlormezanone
 in
 musculoskeletal
 "splinting"



He needs his muscles working properly—
 when they aren't, he needs

Trancopal

Although "splinting" of a joint by skeletal muscle spasms is often protective, it can go too far or continue too long. Then spasm, pain and disuse may lead to wasting.

When you prescribe Trancopal, you can prevent "oversplinting." Trancopal will relax the spasm, ease the pain and get the muscle working again. Relaxation generally begins within half an hour, and the effects of one tablet last from four to six hours.

In addition to relaxing the muscle, Trancopal will mildly tranquilize the patient, reducing the restlessness and irritability that so often accompany discomfort. With Trancopal, the patient can soon start purposeful exercise and physical therapy.

Trancopal has been found very effective in the treatment of patients with low back pain (lumbago), neck pain (torticollis), bursitis, fibrositis, myositis, ankle sprain, tennis elbow, osteoarthritis, rheumatoid arthritis, disc syndrome and postoperative muscle spasm. Trancopal is available in 200 mg. Caplets® (green colored, scored) and in 100 mg. Caplets (peach colored, scored), bottles of 100.

Dosage: Adults, 1 Caplet (200 mg.) three or four times daily; children (5 to 12 years), from 50 to 100 mg. three or four times daily.

Winthrop LABORATORIES
 New York 18, N.Y.



**DORNWAL® IS THE TRANQUILIZER
VERSATILE ENOUGH TO
BE USED ALMOST ANYWHERE.**

Take, for instance, the woman in our picture, suffering from a really severe tension headache. Aspirin she has tried, of course; but suppose she's called you and you prescribed Dornwal. What would you expect?

First, let us say you told the druggist to indicate the dosage that our clinical research has shown is useful in these cases — 1 or 2 tablets t.i.d. In all probability, she would experience relief of pain and a general relaxation in less than an hour. If she is doing her housework, she could go on with it, because she wouldn't get sleepy.

Dornwal is one tranquilizer that doesn't make people sleepy. It's a tranquilizer pure and simple. Its effectiveness you will see clearly the next time you encounter a patient given to tension headaches. Try Dornwal and see the results.

Dosage: One or two 200 mg. tablets three times a day. Children, age 6 to 16, one or two 100 mg. tablets two times a day.

Supplied: 200 mg. yellow scored tablets, and 100 mg. pink tablets, each in bottles of 100 and 500.

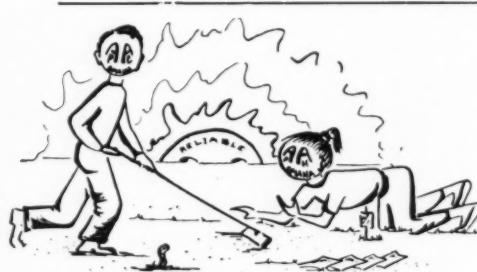
P.S. For the "Genericist," Dornwal is amphenidone.

No absolute contraindications to the use of Dornwal are known. There have been no reports or evidence of habituation, addiction or drug tolerance in animal or clinical studies. Dornwal is relatively free from untoward effects when administered at recommended dosages.

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if you're
treating
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you can't prescribe a more
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How much "spectrum" do you need in treating an infection? Clearly, you want an antibiotic that will show the greatest activity against the offending organism, and the least activity against non-pathogenic gastro-intestinal flora.

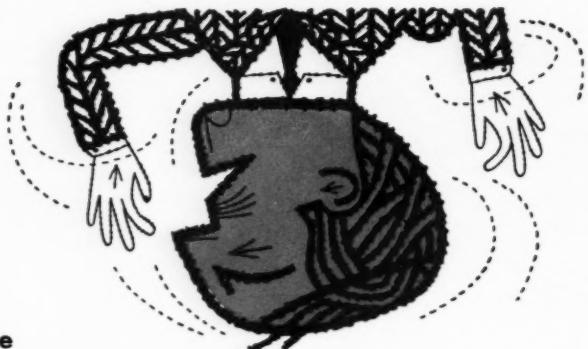
Weigh these criteria—and make this comparison—when treating your next coccal infection. Erythrocin is a medium-spectrum antibiotic, notably effective

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Prescribe one ANTIVERT tablet (or 1-2 teaspoonfuls ANTIVERT syrup) 3 times daily, before each meal, for prompt relief of vertigo, Meniere's syndrome and allied disorders. Side effects are short-lived, usually only harmless flushing and tingling associated with vasodilation. ANTIVERT is contraindicated in severe hypotension and hemorrhage.

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Reference: 1. Scal, J. C.: Eye Ear Nose & Throat Month. 38:738 (Sept.) 1959.



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Each teaspoonful (5 cc.) contains 6.25 mg. meclizine HCl and 25 mg. nicotinic acid.

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*"benign"
glycosuria...
danger sign*

"Benign" glycosuria can be the first sign of impending diabetes when observed in predisposed persons during the "silent" period preceding frank diabetes. In one series of 1,140 diabetics, 96 had been informed of "benign" glycosuria prior to development of diabetes.*

If these patients had periodically tested their urine after the first finding of glycosuria, many of them might have detected recurrence of glycosuria—thus permitting earlier diagnosis of diabetes by the physician and possible avoidance of degenerative complications. Slight glycosuria, even when only occasional, should always arouse suspicion of latent diabetes.

*Pomeranz, J.: J. New York
M. Coll. 1:32, 1959.

Periodic urine-sugar testing at home is an integral part of the follow-up of "benign" glycosuria. Its practicality is increased when the patient charts his findings on the CLINITEST® Graphic Analysis Record. This chart frees the physician from dependence on the patient's memory and enables him to follow at a glance the trend and degree of any glycosuria.

for follow-up of "benign" glycosuria and earliest detection and control of Diabetes

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Standardized urine-sugar test for reliable quantitative estimations • familiar blue-to-orange spectrum—easily interpreted results • "plus" system covers entire critical range—including 3/4% (++) and 1% (+++) • patient cooperation encouraged by use of Graphic Analysis Record—supplied with CLINITEST Set and each tablet refill package.

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Itching in children can now be controlled on b.i.d. dosage with a long-acting¹ antipruritic/antiallergic chewable tablet your pediatric patients will enjoy taking. They can also benefit by the effectiveness of Tacaryl Hydrochloride in controlling symptoms in a wide variety of allergic conditions,²⁻⁸ including hay fever and perennial rhinitis.

dosage: One Chewable Tablet (3.6 mg.) twice daily. Adjustment of dose or interval may be desirable for some patients.

contraindications: There are no known contraindications.

side effects: Drowsiness has been observed in a small percentage of patients. Dizziness, nausea, headache, and dryness of mucous membranes have been reported infrequently.

cautions: If drowsiness occurs after administration of Tacaryl Chewable Tablets or Tacaryl Hydrochloride, the patient should not drive a motor vehicle or operate dangerous machinery. Since Tacaryl Chewable Tablets or Tacaryl Hydrochloride may display potentiating properties, it should be used with caution for patients receiving alcohol, analgesics or sedatives (particularly barbiturates). Because of reports that phenothiazine derivatives occasionally cause side reactions such as agranulocytosis, jaundice and orthostatic hypotension, the physician should be alert to their possible occurrence...though no such reactions have been observed with Tacaryl Chewable Tablets or Tacaryl Hydrochloride.

supplied: Pink tablets, 3.6 mg., bottles of 100.

references: (1) Lish, P. M.; Albert, J. R.; Peters, E. L., and Allen, L. E.: *Arch. internat. pharmacodyn.* 129:77-107 (Dec.) 1960.
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